U.S. DEPARTMENT OF COMMERCE
National Technical Information Service
PB-284 399

Annotated Bibliography of Interagency Energy/Environment R and D Program Publications

Vitro Labs, Silver Spring, Md

Prepared for

Environmental Protection Agency, Washington, D C

Oct 77

PB 284 399

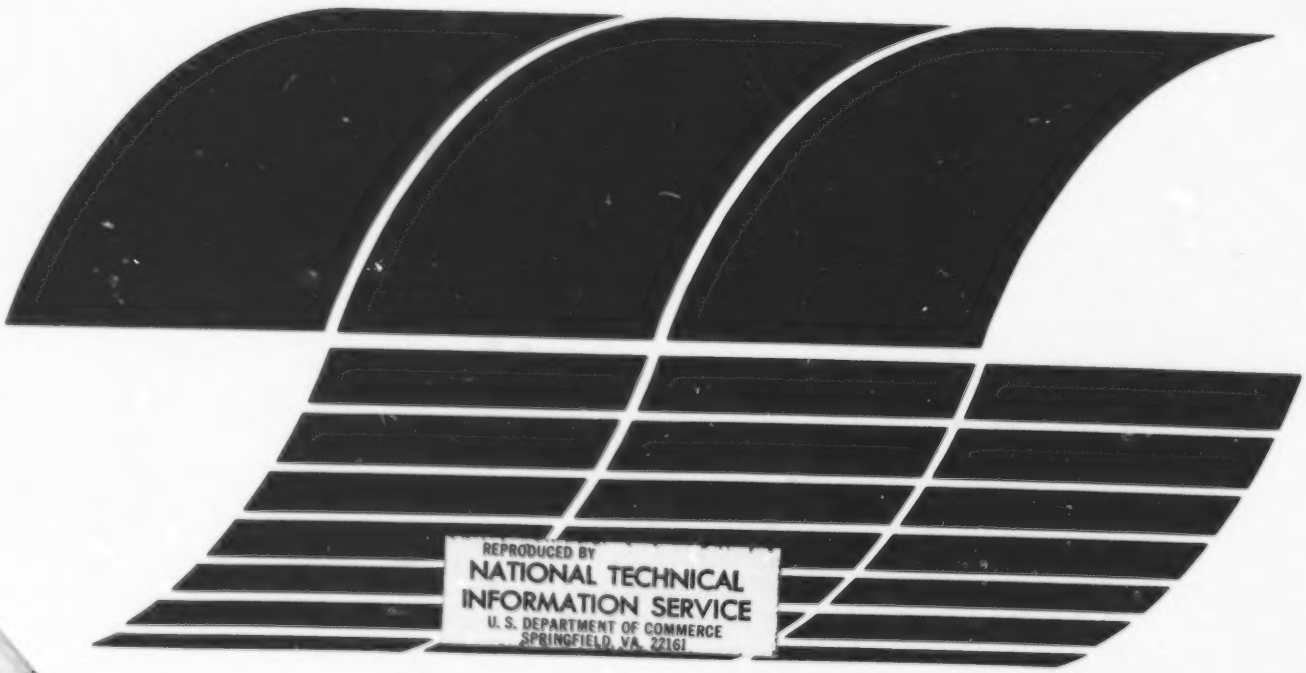
EPA Decision Series

United States Environmental Protection Agency | Office of Research and Development | Energy, Minerals and Industry

EPA-600/9-77-031

October 1977

Bibliography of the Interagency Energy/Environment R&D Program



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Text — Jaye Epstein
Processing — John Z. Terebey

TECHNICAL REPORT DATA
(Please read Instructions on the reverse before completing)

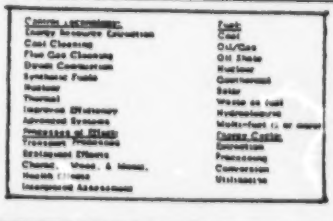
1. REPORT NO. EPA-600/9-77-031	2.
3. RECIPIENT'S ACCESSION NO. PB 284 599	
4. TITLE AND SUBTITLE: Annotated Bibliography of Interagency Energy/ Environment R&D Program Publications	5. REPORT DATE October 1977
	6. PERFORMING ORGANIZATION CODE
7. AUTHOR(S) R. Laska, J. Epstein	8. PERFORMING ORGANIZATION REPORT NO.
9. PERFORMING ORGANIZATION NAME AND ADDRESS Vitro Vitro Labs Division Silver Spring, MD 20910	10. PROGRAM ELEMENT NO. 1NE-626
	11. CONTRACT/GRANT NO. 68-01-2934
12. SPONSORING AGENCY NAME AND ADDRESS U.S. Environmental Protection Agency Office of Research & Development Office of Energy, Minerals & Industry Washington, D.C. 20460	13. TYPE OF REPORT AND PERIOD COVERED Bibliography
	14. SPONSORING AGENCY CODE EPA/600/17

15. SUPPLEMENTARY NOTES

16. ABSTRACT

The Annotated Bibliography contains information pertaining to publications sponsered by the Environmental Protection Agency's Interagency Energy/Environment Research and Development Program. The intent of this document is to assist the researcher or the interested public in identifying and locating documents which are pertinent to their current interests.

17. KEY WORDS AND DOCUMENT ANALYSIS (circle one or more)

a. DESCRIPTORS	b. IDENTIFIERS/OPEN ENDED TERMS	c. COSATI Field/Group
Ecology Environments Earth Atmosphere Environmental Engineering Geography Hydrology, Limnology Biochemistry Earth Hydrosphere Combustion Refining Energy Conversion Physical Chemistry Materials Handling Inorganic Chemistry Organic Chemistry Chemical Engineering		6F 8A 8F 8H 10A 10B 7B 7C 13B

DISTRIBUTION STATEMENT Release Unlimited Available free from EPA/OEMI while the supply lasts	19. SECURITY CLASS (This Report) unclassified	21. NO. OF PAGES 39
	20. SECURITY CLASS (This page) unclassified	22. PRICE A03-A01

Form 2220-1 (9-73)

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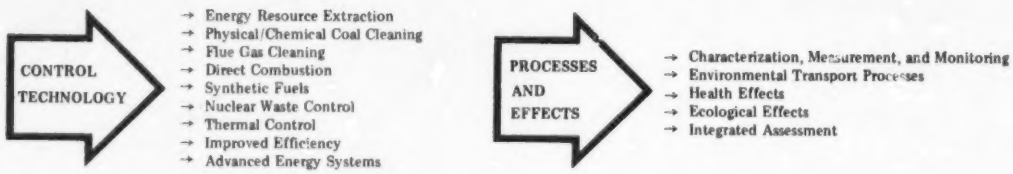
INTRODUCTION

This annotated bibliography lists publications sponsored by the Environmental Protection Agency's (EPA) Interagency Energy/Environment Research and Development Program. Our intent is to assist you in identifying and locating these documents.

As part of the Energy/Environment R&D Decision Series, the annotated bibliography contains only the most recent publications. Because of the importance of disseminating 'State of the Art' information, publications cited in this document include several for which EPA and National Technical Information Service (NTIS) identification numbers were not available in time to be included in this bibliography. These omissions will, of course, be corrected in the next edition of this bibliography.

FORMAT

The publications contained herein are organized under 14 major category headings:



Under each category heading is a list of publications. Each publication is presented in the following format:

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- Author(s)
- Performing agency/sponsoring agency
- Month/year of publication, EPA number (if available), and NTIS number (if available)
- A brief abstract of the publication (if available)

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Information concerning the title, authors, EPA number, and NTIS number should be enclosed with each request for documents. However, NTIS may be contacted to obtain the current price and availability for appropriate documents.

For information on reports which do not have NTIS numbers, contact:

Pat Folkers
EPA ERIC
Cincinnati, Ohio 45268

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BIBLIOGRAPHY OF INTERAGENCY ENERGY/
ENVIRONMENT R&D PROGRAM PUBLICATIONS

CATEGORY - ENERGY RESOURCE EXTRACTION

PUBLICATION

SYMPOSIUM ON ANALYTICAL CHEMISTRY OF TAR SANDS AND OIL SHALE (COMPARISON WITH COAL & PETROLEUM)
B. E. CLARK, C. H. HO, AND A. H. JONES
OAK RIDGE NATIONAL LAB/ERDA
00/00,

COAL AND THE ENVIRONMENT ABSTRACT SERIES MINE DRAINAGE BIBLIOGRAPHY 1910-1976
V. E. GLEASON AND H. H. RUSSELL
BITUMINOUS COAL RESEARCH, INC./EPA
03/77, EPA-600/2-77-082,
THE COAL MINE DRAINAGE BIBLIOGRAPHY COVERS THE FOLLOWING AREAS: SURFACE & UNDERGROUND MINES, ACTIVE & ABANDONED MINES, RECLAIMED SURFACE MINES, & PLANNING OF NEW MINES. A LARGE NUMBER OF ITEMS ARE CONCERNED WITH EFFECTS OF MINE DRAINAGE ON RIVERS & STREAMS.

ENVIRONMENTAL ASSESSMENT OF GEOPRESSURED WATERS AND THEIR PROJECTED USES
J. S. WILSON, J. R. HAMILTON, J. A. MANNING, AND P. L. MUEHLBERG
DOW CHEMICAL/EPA
04/77, EPA-600/7-77-039,
THE DEEP GEOPRESSURED RESERVOIRS ALONG TEXAS & LOUISIANA GULF COAST ARE BELIEVED TO OFFER A LARGE POTENTIAL SUPPLY OF BOTH NATURAL GAS AND HEAT ENERGY. MAJOR ENVIRONMENTAL EFFECTS OF DEVELOPMENT ARE DIVIDED INTO EMISSIONS AND GEOLOGICAL CONSIDERATIONS.

SEAMALERT: CURRENT SURFACE-MINE RECLAMATION LITERATURE ALERTING SERVICE VOL. I
(INDIVIDUAL AUTHORS NOT IDENTIFIED)
USDA/EPA
02/77,

SEAMALERT: CURRENT SURFACE-MINE RECLAMATION LITERATURE ALERTING SERVICE VOL. II
(INDIVIDUAL AUTHORS NOT IDENTIFIED)
USDA/EPA
03/77,

PROTOTYPE SYSTEM FOR PLUGGING LEAKS IN RUPTURED CONTAINERS
J. J. VROLYK, R. C. MITCHELL, AND R. W. MELVOLD
ROCKETDYNE DIVISION, ROCKWELL INTERNATIONAL/EPA
12/76, EPA-600/2-76-300,
A DEVELOPMENT PROGRAM WAS PERFORMED SUCCESSFULLY TO DEVELOP & TEST A PROTOTYPE SYSTEM FOR TEMPORARILY STOPPING THE FLOW OF HAZARDOUS MATERIALS SPILLING ON LAND OR UNDERWATER FROM RUPTURED OR DAMAGED CONTAINERS. THE PROTOTYPE SYSTEM IS PORTABLE, INTEGRATED, AND FIELD-OPERABLE BY ONE MAN. THE PROTOTYPE LEAK-PLUGGING SYSTEM HAS BEEN DEV. TO THE POINT THAT IT IS NOW REALISTIC TO PROJECT PRACTICAL FIELD USE OF SUCH A SYSTEM.

OIL SPILL AND OIL POLLUTION REPORTS-NOVEMBER 1976-JANUARY 1977
PENELOPE MELVIN, HELMUT EHRENSPECK, AND PAUL NORDIN
UNIVERSITY OF CALIFORNIA, MARINE SCIENCE INSTITUTE/EPA
04/77, EPA-600/2-77-075,
THE NOVEMBER 1976-JANUARY 1977 OIL SPILL AND OIL POLLUTION REPORTS IS THE TENTH QUARTERLY COMPILATION OF OIL SPILL EVENTS AND OIL POLLUTION REPORT SUMMARIES.

ASSESSMENT OF ENVIRONMENTAL ASPECTS OF URANIUM MINING AND MILLING
A. H. REED, H. C. MEEKS, S. E. POMEROY, AND V. J. HALE
BATTELLE COLUMBUS LAB/EPA
12/76, EPA-600/7-76-036,
THIS RESEARCH WAS INITIATED WITH THE BASIC OBJECTIVE OF MAKING A PRELIMINARY ASSESSMENT OF THE POTENTIAL ENVIRONMENTAL IMPACTS ASSOCIATED WITH THE MINING AND MILLING OF DOMESTIC URANIUM ORE. POTENTIAL ENVIRONMENTAL IMPACTS ASSOCIATED WITH THE ENTIRE CYCLE FROM EXPLORATION AND MINING TO RECOVERY AND PRODUCTION OF YELLOWCAKE ARE IDENTIFIED AND DISCUSSED.

A RIGID, PERFORATED PLATE OIL BOOM FOR HIGH CURRENTS
RAI R. AYRES
SHELL DEVELOPMENT COMPANY/EPA
12/76, EPA-600/2-76-263,
THIS REPORT FOCUSES ON A BOOM CAPABLE OF DIVERTING OIL SPILLS TOWARD SHORE IN A 3-KNOT RIVER OR TIDAL CURRENT. LOSS OF NO.2 AND NO.3 FUEL OIL AT THIS VELOCITY IS TYPICALLY LESS THAN 15% WHEN THE ANGLE OF THE BOOM IS 45 DEGREES TO THE SHORE. CONVENTIONAL BOOMS LOSE THIS AMOUNT AT ONLY 1-KNOT. GOOD HIGH CURRENT PERFORMANCE IS ACHIEVED BY PLACING A BAFFLE UPSTREAM OF A CONVENTIONAL BOOM. DRAWINGS PROVIDED.

DATA BASE FOR SURFACE MINING AND LAND RECLAMATION
RONALD MACDONALD
ANL/ERDA
00/00,

INTERIM REPORT ON ENVIRONMENTAL EFFECTS OF HAUL ROADS, PART 1: GENERAL
J. D. ARNIJO AND E. S. SUNDBERG
USDA/EPA
07/76,

REPORT ON ENVIR. EFFECTS OF HAUL ROADS, PART 2: SIMPLIFIED MODEL OF EFFECTS OF EMBANKMENTS ON GROUND WATER
A. C. SCHEER AND A. D. TRAEHOLT
USDA/EPA
00/00,

CATEGORY - ENERGY RESOURCE EXTRACTION

PUBLICATION

PRELIMINARY RESULTS FROM A STUDY OF COAL MINING EFFECTS ON WATER QUALITY OF THE TONGUE RIVER, WYOMING
RICHARD D. OLSEN AND EDWARD H. DETTMANN
ANL/ERDA
04/73,

TIOGA RIVER MINE DRAINAGE ABATEMENT PROJECT
A. F. MIORIN, R. S. KLINGENSMITH, AND R. E. HEILER
GANNETT FLEMING CORDDRY & CARPENTER, INC./EPA
00/76, EPA-600/2-76-106, NTIS-PB 254 418

FEASIBILITY STUDY; DEAR PARK DAYLIGHTING PROJECT
A. B. RICHARDSON AND T. DOUGHERTY
ACKENHEIL AND ASSOCIATES/EPA
00/76, EPA-600/2-76-110, NTIS-PB 257 135

DEBRIS BASINS FOR CONTROL OF SURFACE MINE SEDIMENTATION
(INDIVIDUAL AUTHORS NOT IDENTIFIED)
KENTUCKY DEPT. OF NATURAL RESOURCES AND CONSERVATION/EPA
00/76, EPA-600/2-76-108, NTIS-PB 255 959
THIS REPORT PRESENTS THE FEASIBILITY FOR DEMONSTRATION OF THE EFFECTIVENESS OF DEBRIS BASINS AS CONTROLLING SOLIDS IN WATER DISCHARGING FROM SURFACE MINE OPERATIONS.

RESOURCES ALLOCATION TO OPTIMIZE MINING POLLUTION CONTROL
K. S. SHUMATE, R. E. SMITH, W. T. BICCA, AND G. M. CLARK
OHIO STATE UNIVERSITY RESEARCH FOUNDATION/EPA
00/76, EPA-600/2-76-112,
A COMPREHENSIVE MODEL FOR MINE DRAINAGE SIMULATION & OPTIMIZATION OF RESOURCE ALLOCATION TO CONTROL MINE ACID POLLUTION IN A WATERSHED HAS BEEN DEVELOPED. THE MODEL IS CAPABLE OF: (A) PRODUCING A FLOW TRACE OF ACID LOAD & FLOW; (B) GENERATING CONTINUOUS RECEIVING STREAM FLOW DATA; (C) PREDICTING ACID LOAD & FLOW FROM MINE DRAINAGE SOURCES; (D) PREDICTING OPTIMUM RESOURCE ALLOCATION USING ALTERNATIVE METHODS OF TREATMENT.

EVALUATION OF SURFACE MINE RECLAMATION TECHNIQUES-CAMPBELL'S RUN WATERSHED, PENNSYLVANIA
M. T. DOUGHERTY AND H. H. HOIZEN
ACKENHEIL AND ASSOCIATES/EPA
00/76, EPA-600/2-76-111, NTIS-PB 255 298
A STUDY WAS PERFORMED TO DEMONSTRATE THE EFFECTIVENESS OF SURFACE RECLAMATION OF STRIP MINED LAND UPON WATER QUALITY IN STREAMS RECEIVING MINE DRAINAGE POLLUTION FROM ABANDONED UNDERGROUND MINES. 52 ACRES OF ABANDONED STRIP MINED LAND WERE REGRADED & REVEGETATED TO REDUCE INFILTRATION TO THE SPOIL ZONE & TO THE DEEP MINE COMPLEX. THE RESULTS OF SAMPLING THE STREAM INDICATED THAT THE PH & ACIDITY HAD IMPROVED.

DEMONSTRATION OF COAL MINE HAUL ROAD SEDIMENT CONTROL TECHNIQUES
W. F. GRIER AND C. F. MILLER
HAYES, SUDDERTH, AND ETHEREDGE, INC./EPA
00/76, EPA-600/2-76-196, NTIS-PB 258 304
THE METHODS OF CONTROLLING EROSION ON HAUL ROADS AS EXAMINED HEREIN ARE TECHNIQUES THAT CAN BE REASONABLY & ECONOMICALLY BE CONSTRUCTED BY CONVENTIONAL EQUIPMENT THAT IS USED OR IS AVAILABLE TO COAL OPERATORS. A METHOD TO COLLECT QUALITATIVE DATA, BY REMOTE INSTRUMENTATION, FOR EVALUATION OF THE EFFECTIVENESS OF THE EROSION CONTROL METHODS IS ALSO DESCRIBED.

ACCIDENTS & UNSCHEDULED EVENTS ASSOCIATED WITH NON-NUCLEAR ENERGY RESOURCES & TECHNOLOGY
C. BLISS, P. CLIFFORD, S. GOLDRABEN, E. GRAF-WEBSTER, K. KRICKENBERGER, H. SAHAR, N. ZIMMERMAN
MITRE CORPORATION/EPA
02/77, EPA-600/7-77-016,
BOTH NATURAL & HUMAN CAUSES OF ACCIDENTS & UNSCHEDULED EVENTS ARE IDENTIFIED FOR EACH STEP IN THE ENERGY CYCLE. ESTIMATES OF FREQUENCY & SEVERITY ARE PRESENTED FOR ALL ACCIDENTS. THE FOLLOWING ENERGY SYSTEMS ARE EXAMINED: COAL, OIL, NATURAL GAS, LNG, HYDROELECTRIC, GEOTHERMAL, AND OIL SHALE.

OIL SPILL AND OIL POLLUTION REPORTS, AUGUST 1976 - OCTOBER 1976
PENELOPE MELVIN, HELMUT EHRENSPECK, AND PAUL NORDIN
MARINE SCIENCE INSTITUTE, UNIVERSITY OF CALIFORNIA/EPA
02/77, EPA-600/2-77-037,
THE AUGUST 1976-OCTOBER 1976 OIL SPILL AND OIL POLLUTION REPORTS IS THE 9TH QUARTERLY COMPOLATION OF OIL SPILL EVENTS AND OIL POLLUTION REPORT SUMMARIES. PRESENTED IN THE REPORT ARE: (A) SUMMARIES OF OIL SPILL EVENTS; (B) SUMMARIES AND BIBLIOGRAPHIC LITERATURE CITATIONS; (C) SUMMARIES OF CURRENT RESEARCH PROJECTS AND (D) PATENT SUMMARIES.

CATEGORY - PHYSICAL AND CHEMICAL COAL CLEANING

PUBLICATION

ENGINEERING/ECONOMIC ANALYSIS OF COAL PREPARATION WITH SO2 CLEAN-UP PROCESSES FOR HIGHER SULFUR COALS
L. HOFFMAN, S. J. ARESCO, E. C. HOLT, JR., A. W. DEURBROUCK
(NOT SUPPLIED)
00/00,

TRACE ELEMENT CHARACTERIZATION AND REMOVAL/RECOVERY FROM COAL AND COAL WASTES
E. E. MENEBKA AND J. H. WILLIAMS
ERDA/EPA
06/76,

EVALUATION OF A NOVEL ELECTROPHORETIC SEPARATION METHOD TO REMOVE PYRITIC SULFUR FROM COAL
R. J. MILLER AND A. F. BAKER
BCR/DOI
00/74,

COMPARISON OF FOSSIL AND WOOD FUELS
E. H. HALL C. H. ALLEN, D. A. BALL, J. E. BURCH, H. H. CONKLE, W. T. LAWHON, T. J. THOMAS, G. R. SMITHSON, JR.
BATTELLE COLUMBUS LAB/EPA
00/76, EPA-600/2-76-056, NTIS-PB 251 622

SULFUR REDUCTION POTENTIAL OF THE COALS OF THE UNITED STATES
J. A. CAVALLARO, H. T. JOHNSTON, AND A. W. DEURBROUCK
BCR/DOI
00/76,

SULFUR REDUCTION POTENTIAL OF THE COALS OF THE UNITED STATES
A. W. DEURBROUCK
BOR/DOI
00/72,

COAL PREPARATION ENVIRONMENTAL ENGINEERING MANUAL
D. C. HUNNEKAMP
J. J. DAVIS ASSOCIATES/EPA
00/76, EPA-600/2-76-138, NTIS-PB 262 716
THE MANUAL PROVIDES AN INTRODUCTION TO PHYSICAL COAL CLEANING TO INDIVIDUALS OUTSIDE OF THE COAL PREPARATION INDUSTRY.

ENVIRONMENTAL CONTAMINATION FROM TRACE ELEMENTS IN COAL PREPARATION WASTES; LITERATURE REVIEW & ASSESSMENT
E. E. MENEBKA, J. H. WILLIAMS, P. L. WANEK, AND J. D. OLSEN
UNIVERSITY OF CALIFORNIA LASL/EPA
00/76, EPA-600/7-76-007,
GIVES RESULTS OF COLLECTING & EVALUATING AVAILABLE INFORMATION ON THE CHEMISTRY & BEHAVIOR OF TRACE ELEMENTS IN COAL PREPARATION WASTES, & ASSESSING THE POTENTIAL FOR ENVIRONMENTAL CONTAMINATION FROM THE TRACE ELEMENTS IN THESE WASTES.

CATEGORY - FLUE GAS CLEANING

PUBLICATION

DEMONSTRATION OF WELLMAN-LORD/ALLIED CHEMICAL FGD TECHNOLOGY: BOILER OPERATING CHARACTERISTICS
R. C. ADAMS, T. E. EGGLESTON, J. L. HASLBECK, R. C. JORDAN, AND ELLEN PULASKI
TRW, INC./EPA
02/77, EPA-600/7-77-014,
RESULTS OF AN INTENSIVE EXAMINATION AND CHARACTERIZATION OF A COAL-FIRED BOILER PRIOR TO RETROFIT OF A FULL SCALE FLUE GAS DESULFURIZATION UNIT EMPLOYING THE WELLMAN-LORD/ALLIED PROCESS. BOILER OPERATING PERFORMANCE, OVERALL ENERGY BALANCE, & THE PERFORMANCE OF AUXILIARIES. DETAILED PROFILES OF THE FLUE GAS AT THE PROPOSED BOILER/FGD UNIT INTERFACE WERE DETERMINED AT VARYING BOILER CONTROL SETTINGS.

NOX FORMATION IN CO FLAMES
E. L. HERRYMAN AND A. LEVY
BATTELLE-COLUMBUS LAB/EPA
01/77, EPA-600/2-77-008C,
THE REPORT GIVES RESULTS OF AN EXPERIMENTAL STUDY TO DETERMINE IF EARLY NO AND NO2 CAN BE OBSERVED IN CO FLAMES, SINCE PROMPT NO IS NOT ANTICIPATED AND SINCE NO2 LEVELS MIGHT BE EXPECTED TO BE LOWER IN CO FLAMES. THE RESULTS GIVE EVIDENCE FOR PROMPT NO IN CO FLAMES AS WELL AS FOR EARLY NO2.

APPLICABILITY OF NOX COMBUSTION MODIFICATIONS TO CYCLONE BOILERS (FURNACES)
T. E. CTVRTNICEK AND S. J. RUSEK
MONSANTO RESEARCH CORPORATION/EPA
01/77, EPA-600/7-77-006,
SUMMARIZES AVAILABLE INFORMATION ON NOX EMISSIONS FROM CYCLONE BOILERS/FURNACES, A SIGNIFICANT STATIONARY SOURCE OF THESE EMISSIONS. IT DISCUSSES THE PRINCIPLES OF CYCLONE BOILER/FURNACE OPERATION, AND PRESENTS POPULATION DATA ON BOILERS IN THIS EQUIPMENT CLASS. BASED ON AVAIL. DATA, THE POTENTIAL FOR EACH COMBUSTION MODIFICATION TO MEET NOX EMISSION STANDARDS IS ANALYZED, AND RECOMMENDATIONS ARE MADE FOR FUTURE WORK.

EFFECTS OF TEMPERATURE AND PRESSURE ON PARTICLE COLLECTION MECHANISMS: THEORETICAL REVIEW
SEYFOUR CALVERT AND RICHARD PARKER
A.P.T., INC./EPA
01/77, EPA-600/7-77-002,
A CRITICAL REVIEW AND EVALUATION OF THE MECHANICS OF AEROSOLS AT HIGH TEMPERATURES AND PRESSURES. DISCUSSED ARE EQUATIONS AND MODELS USED TO PREDICT PARTICLE BEHAVIOR AT NORMAL CONDITIONS, WITH REGARD TO THEIR APPLICABILITY AT HIGH TEMPERATURES & PRESSURES. THE REPORT CONCLUDES THAT PARTICLE COLLECTION AT HIGH TEMPS. & PRESSURES WILL BE MORE DIFFICULT & EXPENSIVE THAN AT LOW TEMPERATURES AND PRESSURES.

PROCEEDINGS: FINE PARTICLE EMISSIONS INFORMATION SYSTEM USER WORKSHOP
M. I. SCHRAG
MIDWEST RESEARCH INSTITUTE/EPA
01/77, EPA-600/7-77-001, NTIS-PB 263 466
PROCEEDINGS OF A WORKSHOP SPONSORED BY EPA'S IERL-RTP IN JUNE 1976. THE WORKSHOP CONSISTED OF A SESSION ON THE BACKGROUND & PURPOSE OF FINE PARTICULATE EMISSIONS INFORMATION SYSTEM, A COMPUTERIZED INFORMATION SYSTEM OF FINE PARTICLE EMISSIONS FROM STATIONARY SOURCES. OTHER SOURCES INCLUDE THE DATA BASE STRUCTURE, THE INPUT DATA REQUIREMENTS, AND THE OUTPUT FORMAT.

FEASIBILITY OF PRODUCING ELEMENTAL SULFUR FROM MAGNESIUM SULFITE
PHILIP S. LOWELL, W. E. CORBETT, G. D. BROWD, AND K. A. WILDE
RADIAN CORPORATION/EPA
10/76, EPA-600/7-76-030, NTIS-PB 262 857
THE RESULTS OF A STUDY TO EXTEND POTENTIAL APPLICATIONS OF MGO FLUE GAS DESULFURIZATION PROCESSES BY ALLOWING THE SULFUR TO BE RECOVERED AS ELEMENTAL SULFUR, AS WELL AS SULFURIC ACID. THE STUDY CONSIDERED THE FEASIBILITY OF COMBINING EXOTHERMIC SO2 REDUCTION REACTION WITH ENDOTHERMIC MGSO3 CALCINATION. PROBLEMS IDENTIFIED INCL. CATALYST PHYSICAL STABILITY, CATALYST/MGO SEPARATION, DUST CARRY-OVER.

TVA'S 1-MW PILOT PLANT: FINAL REPORT ON HIGH-VELOCITY SCRUBBING & VERTICAL DUCT MIST ELIMINATION
G. MCLLINDEN, R. BOHARIS, H. MOORE, T. KELSO, AND R. COLE
TENNESSEE VALLEY AUTHORITY/EPA
03/77, EPA-600/7-77-019,
THE REPORT DESCRIBES THE SYSTEMATIC TEST PROGRAM THAT LED TO THE DEVELOPMENT OF WASHING TECHNIQUES THAT MAINTAIN CONTINUOUS MIST ELIMINATOR PERFORMANCE FOR LIME/LIMESTONE CLOSED-LOOP SCRUBBING SYSTEMS.

MAGNESIA SCRUBBING APPLIED TO A COAL-FIRED POWER PLANT
GEORGE KOEHLER
CHEMICO AIR POLLUTION CONTROL COMPANY/EPA
03/77, EPA-600/7-77-018,
GIVES RESULTS OF A FULL-SIZE DEMONSTRATION OF THE MAGNESIA WET-SCRUBBING SYSTEM FOR FLUE GAS DESULFURIZATION ON A COAL-FIRED UTILITY BOILER. A TEST PROGRAM, USING ONLY THE WET-SCRUBBING UNIT FOR PARTICLE EMISSIONS CONTROL, ACHIEVED A COLLECTION EFFICIENCY OF 99.6%. MAGNESIA WAS REGENERATED & RECYCLED SUCCESSFULLY. THE SO2 PRODUCED DURING REGENERATION WAS USED TO MANUFACTURE 100% GRADE SULFURIC ACID WHICH WAS MARKETED.

EPA FABRIC FILTRATION STUDIES: 1. PERFORMANCE OF NON-WOVEN NYLON FILTER BAGS
JAMES H. TURNER
EPA/EPA
03/77, EPA-600/2-76-168A,
GIVES RESULTS OF TESTING BAGS MADE OF SPUNBONDED NYLON 66 IN SINGLE-BAG BAGHOUSES AT FLYASH GRAIN LOADINGS OF 1.5-3.0 GRAINS/CU FT, AT AIR-TO-CLOTH RATIOS OF 4.3-8.7 FPM, & AT RELATIVE HUMIDITIES OF 20-40%. RESULTS SHOWED INCREASED FILTRATION EFFICIENCY WITH INCREASED FABRIC WEIGHT. CONCLUSIONS BASED ON LIMITED TESTING WERE THAT SPUNBONDED NYLON BAGS HAVE HIGHER EFFICIENCY.

CATEGORY - FLUE GAS CLEANING

PUBLICATION

COMPACT, IN-STACK, THREE SIZE CUT PARTICLE CLASSIFIER
GEORGE E. LACEY, KENNETH M. CUSHING, AND WALLACE B. SMITH
SOUTHERN RESEARCH INSTITUTE/EPA
04/77, EPA-600/7-77-033,
A COMPACT, IN-STACK, 3-SIZE CUT PARTICLE CLASSIFIER WAS DESIGNED, FABRICATED & TESTED. THE CLASSIFIER CONSISTS OF A 2-STAGE IMPACTOR & BACK-UP FILTER DESIGNED TO MEASURE THE PARTICULATE EMISSIONS FROM SOURCES IN 3 SIZE RANGES. WITH THIS COMPACT SAMPLING SYSTEM, MEASUREMENTS OF THE 3 SIZE FRACTIONS ARE POSSIBLE OVER A WIDE RANGE OF TEST CONDITIONS.

ELECTRIC CURTIN DEVICE FOR CONTROL AND REMOVAL OF FINE PARTICLES
A. YEN, B. J. TURNBULL, AND C. E. HENDRICKS
UNIVERSITY OF ILLINOIS/EPA
02/77, EPA-600/2-77-055,
GIVES RESULTS OF AN EVALUATION OF AN ELECTRIC CURTAIN FOR THE PURPOSE OF PARTICULATE CONTROL & REMOVAL. IF THE PARTICLES ARE CHARGED BY CORONA, THE CURTAIN WILL STOP THEM ONLY IN A VERY SLOW AIR FLOW. A VERTICAL CURTAIN WOULD STOP THE PARTICLES AND A 45-DEGREE CURTAIN WOULD MOVE THEM ALONG THE CURTAIN WITHOUT PENETRATING IT. A HORIZONTAL ELECTRIC CURTAIN COULD BE USED TO SUSPEND THE PARTICLES AGAINST GRAVITY.

DESIGN, DEVELOPMENT, AND DEMONSTRATION OF A FINE PARTICULATE MEASURING DEVICE
FEDOR LILIENFELD, DANIEL P. ANDERSON, AND DOUGLAS W. COOPER
GCA, TECHNOLOGY DIVISION/EPA
04/77, EPA-600/2-77-077,
DESCRIBES THE DESIGN, DEVELOPMENT, AND TESTING OF A FINE PARTICULATE SOURCE MONITORING INSTRUMENT FOR REAL-TIME MEASUREMENT OF MASS CONCENTRATION AS A FUNCTION OF AERODYNAMIC PARTICLE SIZE. IT INCLUDES A LITERATURE REVIEW AND SELECTION OF THE OPERATING PRINCIPLE ON WHICH THE INSTRUMENT IS BASED.

PILOT PLANT DESIGN FOR CHEMICAL DESULFURIZATION OF COAL
L. J. VAN NICE AND H. J. SANTY
TRW SYSTEMS GROUP/EPA
04/77, EPA-600/2-77-080,
THE REPORT GIVES RESULTS OF A PROGRAM FOR DESIGN AND OPERATIONAL PLANNING OF FACILITIES FOR TESTING THE MEYERS PROCESS FOR CHEMICAL REMOVAL OF PYRITIC SULFUR FROM COAL.

RECENT USSR LITERATURE ON CONTROL OF PARTICULATE EMISSIONS FROM STATIONARY SOURCES
CHARLES E. FEAZEL
SOUTHERN RESEARCH INSTITUTE/EPA
04/77, EPA-600/2-77-084,
THE REPORT REVIEWS APPROX. 600 ARTICLES, PUBLISHED BETWEEN 1970 & 1975 IN SEVERAL TECHNICAL & SCIENTIFIC JOURNALS IN THE USSR AND COMPILED & CLASSIFIED ACCORDING TO SUBJECT CONTENT. THE ARTICLES WERE SELECTED AS SIGNIFICANT INDICATORS OF THE STATUS OF THE TECHNOLOGY OF CONTROLLING AIR POLLUTION BY PARTICULATE EMISSIONS FROM STAT. SOURCES, WITH EMPHASIS ON FLY ASH FROM THE COMBUSTION OF COAL IN ELECTRIC POWER PLANTS.

EPA ALKALI SCRUBBING TEST FACILITY: ADVANCED PROGRAM SECOND PROGRESS REPORT
H. W. HEAD
BECHTEL CORPORATION/EPA
00/76, EPA-600/7-76-008, NTIS-PB 258 783
THE REPORT GIVES RESULTS OF ADV. TESTING OF 30,000 ACFM LIME/LIMESTONE WET SCRUBBERS FOR SO2 & PARTICULTE REMOVAL AT TVA'S SHAWNEE POWER STATION. NO RELIABILITY PROBLEMS WERE EXPERIENCED IN 1143 HRS. OF LIME TESTING WITH CYCLING GAS RATE TO SIMULATE VARIABLE LOAD OPERATION IN THE VENTURI/SPRAY TOWER.

EVALUATION OF CERAMIC FILTERS FOR HIGH-TEMPERATURE/HIGH-PRESSURE FINE PARTICULATE CONTROL
G. G. POE, R. H. EVANS, W. S. BONNETT, AND L. R. WATERLAND
AEROTHERM CORP./EPA
02/77, EPA-600/2-77-056,
RESULTS OF A STUDY TO ANALYZE & EVALUATE CERAMIC MEMBRANE FILTERS AS A NEW, FINE PARTICULATE CONTROL CONCEPT FOR HIGH-TEMPERATURE, HIGH-PRESSURE PROCESSES. THE FILTERS ARE 2-6 MM THICK, CYLINDRICAL, & AVAILABLE WITH PORE SIZES, UPWARD FROM 0.5 MICROMETERS. THE APPLICATION OF CERAMIC MONOLITHS TO HIGH-TEMPERATURE FINE PARTICULATE CONTROL APPEARS VERY PROMISING.

PROCEEDINGS: SEMINAR ON THE IN-STACK PARTICLE SIZING FOR PARTICULATE CONTROL DEVICE EVALUATION
DOUGLAS VAN OSDELL, COMPILER
RESEARCH TRIANGLE INSTITUTE/EPA
02/77, EPA-600/2-77-060,
THE SEMINAR WAS HELD AT RESEARCH TRIANGLE PARK, NC ON DEC. 3&4, 1975. THE FIRST DAY FOCUSED ON THE USE OF CASCADE IMPACTORS; SIZING TECHNIQUES OTHER THAN CASCADE IMPACTORS WERE DISCUSSED ON THE SECOND DAY. THE PROCEEDINGS CONSIST OF EDITED VERSIONS OF THE SPEAKERS' TRANSCRIPTS.

INVENTORY OF COMBUSTION-RELATED EMISSIONS FROM STATIONARY SOURCES (FIRST UPDATE)
OWEN W. DYKEMA AND VERNON E. KEMP
AEROSPACE CORPORATION/EPA
03/77, EPA-600/2-77-066A,
THE STUDY IS AIMED AT ASSISTING IN THE ESTABLISHMENT OF PRIORITIES FOR DETAILED STUDIES OF TECHNIQUES FOR THE CONTROL OF COMBUSTION-RELATED EMISSIONS FROM STATIONARY SOURCES. THE INVENTORY INCLUDES EMISSIONS OF OXIDES OF NITROGEN, HYDROCARBONS, CARBON MONOXIDE, AND PARTICULATE MATTER. IDENTIFIED ARE APPROXIMATELY 68% OF PARTICULATE MATTER AND BETWEEN 93% AND 97% OF NOX, HYDROCARBON, AND CARBON MONOXIDE.

CATEGORY - FLUE GAS CLEANING

PUBLICATION

EVALUATION OF MOLTEN SCRUBBING FOR FINE PARTICULATE CONTROL
G. G. POE, L. E. WATERLAND, AND E. J. SCHREIBER
AEROTHERM DIVISION, ACUREX CORP./EPA
03/77, EPA-600/2-77-067,
THE REPORT GIVES RESULTS OF AN EVALUATION OF MOLTEN SCRUBBING FOR FINE PARTICULATE CONTROL, A CONCEPT THAT STUDY RESULTS INDICATE AS SEEMING TO BE FEASIBLE. MOLTEN SCRUBBING IS ESPECIALLY WELL-SUITED TO PROCESSES WHERE SIMULTANEOUS REMOVAL OF SULFUR COMPOUNDS IS DESIRED. TWO PROBLEMS EXIST: (1) FINDING CONSTRUCTION MATERIAL AT AN ACCEPTABLE COST; AND (2) IMPROVING GAS/LIQUID SEPERATION AND MIST ELIMINATOR DESIGN.

ELECTOSTATIC PRECIPITATOR MALFUNCTIONS IN THE ELECTRIC UTILITY INDUSTRY
MIKE SZABO AND RICHARD GERSTLE
PEDCO.-ENVIRONMENTAL SPECIALISTS, INC./EPA
01/77, EPA-600/2-77-006, NTIS-PB 263 504
DISCUSSES PRECIPITATOR MALFUNCTIONS IN THE ELECTRIC UTILITY INDUSTRY. ESP DEGRADATION IS ATTRIBUTABLE TO HARDWARE MALFUNCTIONS OR OPERATION UNDER IMPROPER CONDITIONS. FOR EACH TYPE OF MALFUNCTION, THE CAUSE, DURATION, CORRECTIVE ACTION, AND PREVENTIVE MEASURES ARE GIVEN. THE REPORT ALSO DESCRIBES THE MAINTENANCE REQUIRED TO MINIMIZE THE PROBABILITY OF MALFUNCTION.

PARTICULATE COLLECTION EFFICIENCY MEASUREMENTS ON AN ESP INSTALLED ON A COAL-FIRED UTILITY BOILER
JOHN P. GOOCH, G. H. MARCHANT,JR., AND LARRY G. FELIX
SOUTHERN RESEARCH INSTITUTE/EPA
01/77, EPA-600/2-77-011,
THE REPORT GIVES RESULTS OF FRACTIONAL AND OVERALL COLLECTION EFFICIENCY MEASUREMENTS OF AN ELECTROSTATIC PRECIPITATOR COLLECTING FLY ASH FROM A COAL-FIRED BOILER BURNING HIGH-SULFUR COAL. MEASURED EFFICIENCIES WERE COMPARED WITH THOSE PREDICTED FROM A COMPUTER MODEL OF ELECTROSTATIC PRECIPITATION. MEASURED EFFICIENCIES WERE HIGHER THAN PREDICTED.

REDUCTION OF NITROGEN OXIDE EMISSIONS FROM FIELD OPERATING PACKAGE BOILERS-PHASE III OF III
R. P. HEAP, C. MCCOMIS, T. J. TYSON, R. E. MCMILLAN, R. E. SOMMERLAD, AND P. D. ZOLDAK
ULTRASYSTEMS, INC./EPA
01/77, EPA-600/2-77-025,
DESCRIBES THE FINAL OF THREE PHASES OF A PROGRAM TO DETERMINE THE OPTIMUM METHODS OF APPLYING BOTH FLUE GAS RECIRCULATION (FGR) & STAGED COMBUSTION TO CONTROL NOX EMISSIONS FROM RESIDUAL OIL-FIRED PACKAGE BOILERS. THE ULTIMATE GOAL OF THE PROGRAM WAS TO DETERMINE IF PACKAGE BOILERS CAN OPERATE IN THE FIELD AFTER MODIFICATION TO CONTROL NOX EMISSIONS WITHOUT ENCOUNTERING PRACTICAL PROBLEMS.

TECHNOLOGY AND ECONOMICS OF FLUE GAS NOX OXIDATION BY OZONE
J. W. HARRISON
RESEARCH TRIANGLE INSTITUTE/EPA
12/76, EPA-600/7-76-033,
RESULTS OF AN INVESTIGATION OF THE KINETICS OF OXIDATION BY NOX AND OZONE & CONCLUDES THAT A STOICHIOMETRIC AMOUNT OF OZONE IS REQUIRED WHEN OXIDATION OCCURS AT FLUE GAS TEMPERATURES TYPICAL FOR ELECTRICAL GENERATING STATIONS. IT ALSO SURVEYS THE STATE OF CURRENT TECHNOLOGY FOR LARGE-SCALE OZONE GENERATION & CONCLUDES THAT ELECTRICAL DISCHARGE IS THE ONLY FEASIBLE METHOD AT PRESENT.

SYMPOSIUM ON PARTICULATE CONTROL IN ENERGY PROCESSES
D. E. BLAKE
ACUREX CORPORATION/EPA
00/76, EPA-600/7-76-010, NTIS-PB 260 499
A COMPILATION OF PAPERS PRESENTED AT A SYMPOSIUM, COSPONSORED BY EPA'S IERL & THE ELECTRIC POWER RESEARCH INSTITUTE, & FEATURING SPEAKERS REPRESENTING THE UTILITY INDUSTRY, RESEARCH ORGANIZATIONS, & GOVT. AGENCIES. PURPOSE OF THE SYMPOSIUM WAS TO EXAMINE THE CURRENT STATE OF PARTICULATE CONTROL TECHNOLOGY FOR ENERGY PROCESSES, & TO DISCUSS PRACTICAL SOLUTIONS TO PROBLEMS WITH PARTICULATE FROM WESTERN COALS.

CHARACTERIZATION OF ASH FROM COAL-FIRED POWER PLANTS
S. S. RAY AND F. G. PARKER
TENNESSEE VALLEY AUTHORITY/EPA
01/77, EPA-600/7-77-010,
SUMMARIZES EXISTING DATA ON THE CHEMICAL AND PHYSICAL CHARACTERISTICS OF ASHES PRODUCED BY BURNING OF COAL IN STEAM-ELECTRIC GENERATING PLANTS. SEVERAL RECENT COAL OR ASH CHARACTERIZATION STUDIES ARE SUMMARIZED, EMPHASIS IS ON ELEMENTAL CHEMICAL COMPOSITION, PARTICULARLY TRACE INORGANIC CONSTITUENTS.

POTENTIAL UTILIZATION OF CONTROLLED SOX EMISSIONS FROM POWER PLANTS IN EASTERN UNITED STATES
J. I. BUCY, J. L. NEVINS, P. A. CORRIGAN, AND A. G. MELICKS
TVA/EPA
03/76,

REDUCTANT GASES FOR FLUE GAS DESULFURIZATION SYSTEMS
D. W. MISSONG, K. S. MURTHY, AND A. W. LEMMON JR.
BATTELLE COLUMBUS LAB/EPA
00/76, EPA-600/2-76-130, NTIS-PB 254 158
GIVES RESULTS OF A STUDY OF THE USE OF COAL OR RESIDUAL-OIL GASIFICATION TO PRODUCE A HYDROGEN/CARBON MONOXIDE-RICH GAS FOR USE AS A REDUCTANT FOR REGENERABLE FLUE GAS DESULFURIZATION (FGD) PROCESSES. THE CAPITAL & OPERATING COSTS FOR REDUCTANT SYSTEMS BASED ON GASIFICATION OF COAL & RESIDUAL OIL ARE ESTIMATED & COMPARED WITH THOSE FOR REDUCTION SYSTEMS BASED ON NATURAL GAS.

CATEGORY - FLUE GAS CLEANING

PUBLICATION

GUIDELINES FOR INDUSTRIAL BOILER PERFORMANCE IMPROVEMENT
MICHAEL W. MCELROY AND DALE E. SHORE
KVB, INC./EPA
01/77, EPA-600/8-77-003A,
CONTAINS RECOMMENDED PROCEDURES FOR IMPROVING INDUSTRIAL BOILER PERFORMANCE TO MINIMIZE AIR POLLUTION AND ACHIEVE EFFICIENT USE OF FUEL. IT IS INTENDED FOR USE BY INDUST. BOILER OPERATORS TO PERFORM AN EFFICIENCY AND EMISSIONS TUNE-UP ON BOILERS FIRING GAS, OIL, OR COAL. PORTIONS ARE ALSO INTENDED FOR PLANT ENGINEERS INTERESTED IN INITIATING PREVENTIVE MAITENANCE & BOILER EFFICIENCY MONITORING TO MAINTAIN PEAK EFFICIENCY.

PROCEEDINGS: SYMPOSIUM ON FLUE GAS DESULFURIZATION-NEW ORLEANS, MARCH 1976:VOL. I
M. D. STERN, W. H. PONDER, AND R. C. CHRISTMAN
EPA/EPA
00/76, EPA-600/2-76-136A, NTIS-PB 255 317
THE PROCEEDINGS DOCUMENT THE PRESENTATIONS MADE DURING THE SYMPOSIUM, WHICH DEALT WITH THE STATUS OF FLUE GAS DESULFURIZATION TECHNOLOGY IN THE U.S. & ABROAD. SUBJECTS CONSIDERED INCLUDED: REGENERABLE, NON-REGENERABLE, & ADVANCED PROCESSES; PROCESS COSTS; & BY-PRODUCT DISPOSAL, UTILIZATION, & MARKETING.

PROCEEDINGS: SYMPOSIUM ON FLUE GAS DESULFURIZATION-NEW ORLEANS, MARCH 1976:VOL. II
M. D. STERN, W. H. PONDER, AND R. C. CHRISTMAN
EPA/EPA
00/76, EPA-600/2-76-136B, NTIS-PB 262 722

CONFERENCE ON PARTICULATE COLLECTION PROBLEMS IN CONVERTING TO LOW SULFUR COALS
G. E. NICHOLS
SOUTHERN RESEARCH INSTITUTE/EPA
00/76, EPA-600/7-76-016, NTIS-PB 260 498
THESE PROCEEDINGS PRESENT PAPERS THAT DISCUSS PROBLEMS ENCOUNTERED IN BURNING LOW-SULFUR COAL IN ELECTRICAL UTILITY POWER PLANT BOILERS. OPERATING EXPERIENCE WITH ELECTROSTATIC PRECIPITATORS, FABRIC FILTER BAGHOUSES, AND WET SCRUBBERS FOR CONTROL OF FLY ASH STACK EMISSIONS & TECHNIQUES FOR IMPROVING PERFORMANCE ARE DESCRIBED. A MATHEMATICAL MODEL IS ALSO PRESENTED FOR FABRIC FILTER ACTION.

CONTROL OF WASTE & WATER POLLUTION FROM POWER PLANT FLUE GAS CLEANING SYSTEMS: 1ST ANNUAL R&D REPORT
P. P. LEO AND J. ROSSOFF
AEROSPACE CORPORATION/EPA
00/76, EPA-600/7-76-018, NTIS-PB 259 211
SUMMARIZES & ASSESSES THE STATE OF RESEARCH & DEVELOPMENT IN THE FIELDS OF NON-REGENERABLE FLUE GAS CLEANING WASTE TREATMENT, UTILIZATION, AND DISPOSAL, AS WELL AS WATER REUSE TECHNOLOGY, FOR COAL-FIRED UTILITY POWER PLANT.

CATALYTIC REDUCTION OF NITROGEN OXIDES WITH AMMONIA: UTILITY PILOT PLANT OPERATION
J. M. KLINE, P. E. OWEN, AND Y. C. LEE
ENVIRONICS, INC./EPA
00/76, EPA-600/7-76-031, NTIS-PB 261 265
DESCRIBES WORK TO DEMONSTRATE, ON A UTILITY PILOT PLANT SCALE, THE PERFORMANCE, RELIABILITY, & PRACTICABILITY OF REDUCING NITROGEN OXIDES (NOX) EMISSIONS FROM STEAM BOILERS BY REDUCTION OF NOX WITH AMMONIA OVER A PLATINUM CATALYST. A UTILITY PILOT PLANT TREATING A SLIPSTREAM FROM AN OPERATING ELECTRIC UTILITY BOILER, EQUIVALENT TO APPROX. 1.5 MW OUTPUT, WAS DESIGNED, INSTALLED, & TESTED ON GAS & OIL FUEL.

PRELIMINARY EMISSIONS ASSESSMENT OF CONVENTIONAL STATIONARY COMBUSTION SYSTEMS-VOL. 1 EXEC. SUMMARY
R. SORRENRANT, E. HALL, AND L. M. SEALE
GCA CORPORATION/EPA
00/76, EPA-600/2-76-046A, NTIS-PB 251 612
GIVES RESULTS OF A PRELIMINARY EMISSIONS ASSESSMENT OF THE AIR, WATER, & SOLID WASTE POLLUTANTS PRODUCED BY CONVENTIONAL STATIONARY COMBUSTION SYSTEMS. IT SUMMARIZES RESULTS IN 4 PRINCIPAL CATEGORIES: UTILITIES, INDUSTRIAL, COMMERCIAL/INSTITUTIONAL, & RESIDENTIAL.

SURVEY OF EMISSIONS CONTROL AND COMBUSTION EQUIPMENT DATA IN INDUSTRIAL PROCESS HEATING
P. A. KETELS, J. D. MESBITT, AND R. D. OBERLE
IIT RESEARCH INSTITUTE/EPA
00/76, EPA-600/7-76-022, NTIS-PB 263 453
GIVES RESULTS OF INVESTIGATIONS OF THE INTERACTION BETWEEN PRESENT & POTENTIAL ENERGY CONSERVATION MEASURES & EMISSION CONTROL GOALS, THE PROBLEMS ASSESSED. BASED ON THESE ASSESSMENTS, R&D PROGRAMS WERE RECOMMENDED TO SOLVE EACH INDUSTRY'S PROBLEMS.

STATE-OF-THE-ART REPORT ON INTAKE TECHNOLOGIES
S. S. RAY AND R. L. SNIPES
TENNESSEE VALLEY AUTHORITY/EPA
00/76, EPA-600/7-76-020,

EMISSIONS FROM RESIDENTIAL AND SMALL COMMERCIAL STOKER-COAL-FIRED BOILERS UNDER SMOKELESS OPERATION
R. T. GIAMMAR, R. B. ENGDAHL, AND R. E. BARRETT
BATTELLE COLUMBUS LAB/EPA
00/76, EPA-600/7-76-029,
GIVES RESULTS OF A TECHNICAL ASSESSMENT OF THE ADVISABILITY OF INCREASED USE OF STOKER COAL FOR RESIDENTIAL & SMALL COMMERCIAL SPACE HEATERS. THE INVESTIGATION INDICATED THAT SMOKELESS OPERATION OF A SMALL STOKER COULD BE ACHIEVED FOR THE COALS EVALUATED.

CATEGORY - FLUE GAS CLEANING

PUBLICATION

PARAMETIC STUDIES OF CATALYSTS FOR NOX CONTROL FROM STATIONARY POWER PLANTS
K. NOBE, G. L. BAUERLE, AND S. C. WU
UNIVERSITY OF CALIFORNIA, LOS ANGELES/EPA
00/76, EPA-600/7-76-026, NTIS-PB 261 289
GIVES RESULTS OF A STUDY OF VANADIA-ALUMINA & IRON OXIDE-CHROMIUM OXIDE-ALUMINA CATALYSTS FOR THE REDUCTION OF NO WITH NH3 IN SIMULATED FLUE GAS. OPTIMUM CATALYST COMPOSITIONS WERE 15% V2O5 ON AL2O3 AND 10% FE-CR OXIDES ON AL2O3 WITH AN FE/CR RATIO OF 1/9, RESPECTIVELY. A TABULATION OF RECENT PUBLICATIONS IN THE FIELD OF NOX CATALYSIS IS PRESENTED.

EPA PROGRAM STATUS REPORT-FUEL CLEANING PROGRAM
M. F. LEVINE, W. H. MCCARTHY, AND G. J. FOLEY
STANFORD RESEARCH INSTITUTE, OERI/EPA
00/76, EPA-600/7-76-013, NTIS-PB 257 703

EFFECTS OF A FLYASH CONDITIONING AGENT ON POWER PLANT EMISSIONS
L. E. SPARKS
EPA/EPA
00/76, EPA-600/7-76-027, NTIS-PB 262 602
GIVES RESULTS OF A STUDY UNDERTAKEN AS A PRELIMINARY PROGRAM TO PROVIDE DATA ON THE ENVIRONMENTAL EFFECTS OF A CHEMICAL FLYASH CONDITIONING AGENT. BOTH EMISSIONS DUE TO THE CHEMICAL AND ITS EFFECT ON ELECTROSTATIC PRECIPITATOR PERFORMANCE WERE INVESTIGATED.

PCB EMISSIONS FROM STATIONARY SOURCES: A THEORETICAL STUDY
H. KNIERIEM JR.
MONSANTO RESEARCH CORPORATION/EPA
00/76, EPA-600/7-76-028, NTIS-PB 262 850
GIVES RESULTS OF A THEORETICAL ASSESSMENT OF POLYCHLORINATED BIPHENYL (PCB) FORMATION & DESTRUCTION IN CONVENTIONAL FOSSIL FUEL FIRED SOURCES. RESULTS SUGGEST A SMALL BUT FINITE POSSIBILITY THAT PCB ISOMERS MAY BE FOUND IN THEIR EMISSIONS.

ENVIRONMENTAL ASSESSMENT PERSPECTIVES
P. F. PENNELLI, L. P. HUROCHER, A. S. WERNER, H. T. MILLS, S. H. WEINSTEIN, ET. AL.
GCA CORPORATION/EPA
00/76, EPA-600/2-76-069, NTIS-PB 257 911
THE REPORT: (1) DEFINES ENV. ASSESSMENT PROGRAMS & THEIR ROLE IN ENERGY SYSTEM DEV.; (2) INDICATES DATA REQUIREMENTS; (3) OUTLINES METHODOLOGIES FOR ACQUIRING DATA; (4) SERVES AS A TECHNOLOGY TRANSFER VEHICLE; (5) SUMMARIZES THE EXTENT, QUALITY, APPLICATIONS, AND LOCATION OF EXISTING INFORMATION RESOURCES; AND (6) SUMMARIZES EXISTING OR PROPOSED STANDARDS AND CRITERIA FOR EVALUATING AIR, WATER, AND LAND BASED POLLUTION.

DISPOSAL OF FLUE GAS CLEANING WASTES: EPA SHAWNEE FIELD EVALUATION-INTERIM REPORT
R. B. FLING, W. H. GRAVEN, F. D. HESS, P. P. LEO, R. C. ROSSI, AND J. ROSSOFF
AEROSPACE CORPORATION/EPA
00/76, EPA-600/2-76-070, NTIS-PB 251 876
DESCRIBES PROGRESS MADE DURING THE INITIAL PHASE OF A FIELD EVALUATION PROGRAM, CONDUCTED BY EPA, TO ASSESS TECHNIQUES FOR THE DISPOSAL OF POWER PLANT FLUE GAS DESULFURIZATION WASTES.

TECHNICAL MANUAL FOR ANALYSIS OF ORGANIC MATERIALS IN PROCESS STREAMS
P. W. JONES, A. P. GRAFFEO, R. DETRICK, P. A. CLARK, AND R. J. JAKOBSEN
BATTELLE COLUMBUS LAB/EPA
00/76, EPA-600/2-76-072, NTIS-PB 259 299
THE MANUAL PRESENTS A VERY SIMPLE ANALYTICAL STRATEGY FOR THE PURPOSE OF INITIAL SURVEY, TO ENSURE THAT IMPORTANT EMISSION PROBLEMS DO NOT GO UNDETECTED. IT ALSO PRESENTS A MORE COMPLEX & DETAILED SCHEME FOR USE ON SAMPLES GIVEN HIGH PRIORITY BY THE INITIAL SURVEY ANALYSIS.

EPA PROGRAM CONFERENCE REPORT-FUEL CLEANING PROGRAM: COAL
E. S. ALTSCHULER, R. E. HUCKO, G. A. ISAACS, P. S. JACOBSON, J. D. KILGROE, H. D. LEVINE, ET. AL.
OERI/EPA
00/76, EPA-600/7-76-024, NTIS-PB 262 876

PRELIMINARY EMISSIONS ASSESSMENT OF CONVENTIONAL STATIONARY COMBUSTION SYSTEMS-VOL. 2 FINAL REPORT
M. SUPPRENT, R. HALL, S. SLATER, T. SUSA, M. SUSSMAN, AND C. YOUNG
GCA CORPORATION/EPA
00/76, EPA-600/2-76-046B, NTIS-PB 252 175
GIVES RESULTS OF A PRELIMINARY EMISSIONS ASSESSMENT OF THE AIR, WATER, & SOLID WASTE POLLUTANTS PRODUCED BY CONVENTIONAL STATIONARY COMBUSTION SYSTEMS. IT SUMMARIZES RESULTS IN 4 PRINCIPAL CATEGORIES: UTILITIES, INDUSTRIAL, COMMERCIAL/INSTITUTIONAL, & RESIDENTIAL.

PRELIMINARY EMISSIONS ASSESSMENT OF CONVENTIONAL STATIONARY COMBUSTION SYSTEMS-VOL. 3 UPDATE (12/75-6/76)
M. SUPRENANT
GCA CORPORATION/EPA
00/76, EPA-600/2-76-046C, NTIS-PB 257 849
THIS REPORT IDENTIFIES & DISCUSSES MAJOR RECENT ONGOING & PROPOSED PROGRAMS IN THE AREA OF POLLUTANT EMISSIONS FROM COMBUSTION SOURCES. THE INFORMATION PRESENTED COVERS THE PERIOD FROM DEC.1975 TO JUNE 1976.

PUBLICATION

EPA FABRIC FILTRATION STUDIES: 2. PERFORMANCE OF NON-WOVEN POLYESTER FILTER BAGS
G. H. RANSEY, R. P. DONOVAN, B. E. DANIEL, AND J. H. TURNER
EPA/EPA
00/76, EPA-600/2-76-168B, NTIS-PB 256 025
GIVES RESULTS OF AN EVALUATION OF FABRIC FILTER BAGS MADE OF NONWOVEN, SPUNBONDED POLYESTER IN A LAB SIMULATION OF A BAGHOUSE OPERATING AT ROOM TEMPERATURE. USING ONLY REDISPERSED POWER PLANT FLYASH, THE COLLECTION EFFICIENCY, SPECIFIC CAKE RESISTANCE, & PRESSURE DROPS WERE MEASURED FOR 7 BAGS EACH OF WHICH WAS MADE FROM ONE OF 7 DIFFERENT SPUNBONDED POLYESTER FABRICS.

AIR, WATER, AND SOLID RESIDUE PRIORITIZATION MODELS FOR CONVENTIONAL COMBUSTION SOURCES
E. C. EIMUTIS, C. H. MOSCOWITZ, J. L. DELANEY, E. P. QUILL, AND D. L. SANDERS
MONSANTO RESEARCH CORPORATION/EPA
00/76, EPA-600/2-76-176, NTIS-PB 257 103
DESCRIBES MATHEMATICAL MODELS THAT WERE DEVELOPED TO RELATIVELY RANK THE ENVIRONMENTAL IMPACT OF WATER & SOLID RESIDUE EMISSIONS. THE REPORT GIVES THE RELATIVE RANKING RESULTING FROM THE APPLICATION OF THE MODELS TO 56 CONVENTIONAL STATIONARY COMBUSTION SOURCES.

EXPER. & THEOR. STUDIES OF SOLID SOLUTION FORMATION IN LIME & LIMESTONE SO2 SCRUBBERS–VOL. I FINAL REPORT
B. F. JONES, P. S. LOWELL, AND F. B. MESEROLE
RADIAN CORPORATION/EPA
00/76, EPA-600/2-76-273A,
GIVES RESULTS OF A THEORETICAL & EXPERIMENTAL STUDY TO CHARACTERIZE THE COPRECIPITATION OF CALCIUM SULFATE WITH CALCIUM SULFITE HEMIHYDRATE. A COPRECIPITATION PRODUCT HAD BEEN SUGGESTED TO EXPLAIN THE MECHANISM BY WHICH SULFATE COULD BE PRECIPITATED FROM A SCRUBBER SOLUTION SUBSATURATED WITH CALCIUM SULFATE.

EXPER. & THEOR. STUDIES OF SOLID SOLUTION FORMATION IN LIME & LIMESTONE SO2 SCRUBBERS–VOL. II APPENDICES
B. F. JONES, P. S. LOWELL, AND F. B. MESEROLE
RADIAN CORPORATION/EPA
00/76, EPA-600/2-76-273B,
GIVES RESULTS OF A THEORETICAL & EXPERIMENTAL STUDY TO CHARACTERIZE THE COPRECIPITATION OF CALCIUM SULFATE WITH CALCIUM SULFITE HEMIHYDRATE. A COPRECIPITATION PRODUCT HAD BEEN SUGGESTED TO EXPLAIN THE MECHANISM BY WHICH SULFATE COULD BE PRECIPITATED FROM A SCRUBBER SOLUTION SUBSATURATED WITH CALCIUM SULFATE.

EFFICIENT USE OF FIBROUS STRUCTURES IN FILTRATION
H. SCHAREF AND E. APIFY
NORTH CAROLINA STATE UNIVERSITY/EPA
00/76, EPA-600/2-76-204, NTIS-PB 257 147
GIVES RESULTS OF A PROJECT TO DEVELOP FIBROUS STRUCTURES FOR AIR FILTRATION WHICH ARE ECONOMICAL & EFFICIENT, & HAVE LOW PRESSURE DROP. FUNDAMENTAL STUDIES WERE CARRIED OUT TO INVESTIGATE THE EFFECT OF DIFFERENT NEEDLED FABRIC PARAMETERS ON THEIR FILTRATION PERFORMANCE & MECHANICAL PROPERTIES.

MEETING REPORT: ADVANCED FOSSIL FUELS SECTOR GROUP, RTP, 13 NOVEMBER 1975
(INDIVIDUAL AUTHORS NOT IDENTIFIED)
STANFORD RESEARCH INSTITUTE/EPA
00/76, EPA-600/5-76-006, NTIS-PB 250 586

ENVIRONMENTAL CONTAMINATION FROM TRACE ELEMENTS IN COAL PROCESSING WASTES. REVIEW & ASSESSMENT OF LITERATURE
E. F. WEWERKA, J. M. WILLIAMS, P. L. WANER, AND J. D. OLSEN
LASL/ERDA
03/76,

TRACE ELEMENTS CHARACTERIZATION AND REMOVAL/RECOVERY FROM COAL AND COAL WASTES
E. M. WEWERKA AND J. M. WILLIAMS
LASL/ERDA
06/76,

EXPERIMENTAL EVALUATION OF FUEL OIL ADDITIVES FOR REDUCING EMISSIONS & INCREASING EFFICIENCY OF BOILERS
R. D. GIAMMAR, A. F. WELLER, D. W. LOCKLIN, AND H. H. KRAUSE
BATTELLE-COLUMBUS LAB/EPA
01/77, EPA-600/2-77-008B,
RESULTS OF AN EVALUATION OF THE EFFECTIVENESS OF COMBUSTION TYPE FUEL ADDITIVES TO REDUCE EMISSIONS & INCREASE EFFICIENCY IN A 50-BHP COMMERCIAL OIL-FIRED PACKAGED BOILER. ADDITIVES, BOTH PROPRIETARY & PURE, WERE EFFECTIVE IN REDUCING CARBON PARTICULATE EMISSIONS BY AS MUCH AS 100% WHEN FIRING RESIDUAL OIL. THEY ALSO WERE EFFECT. IN REDUCING EMISS. OF SMOKE & POLYCYCLIC ORGANIC MATTER. NONE WERE EFFECT. FOR NOX & SO4.

COMBUSTION ADDITIVES FOR POLLUTION CONTROL–A STATE-OF-THE-ART REVIEW
H. H. KRAUSE, L. J. HILLENBRAND, A. F. WELLER, AND D. W. LOCKLIN
BATTELLE-COLUMBUS LAB/EPA
01/77, EPA-600/2-77-008A,
A STATE-OF-THE-ART REVIEW OF THE POTENTIAL OF COMBUSTION-TYPE FUEL ADDITIVES IN REDUCING AIR POLLUTANT EMISSIONS FROM OIL & COAL FIRING. THE REPORT CONTAINS 2 PARTS: A REVIEW OF THE RELATION OF COMBUSTION MECHANISMS TO ADDITIVE ACTION IN CONTROLLING EMISSIONS; AND A REVIEW OF EXPERIMENTAL INVESTIGATIONS OF COMBUSTION-TYPE FUEL ADDITIVES.

CATEGORY - FLUE GAS CLEANING

PUBLICATION

QUALITY ASSURANCE PROGRAM FOR THE EPA/SHAWNEE WET LIMESTONE SCRUBBER DEMONSTRATION
J. BUCHANAN
RESEARCH TRIANGLE INSTITUTE/EPA
00/76, EPA-600/2-76-080, NTIS-PB 252 258
THE REPORT DESCRIBES A SHORT-TERM QUALITY ASSURANCE PROGRAM, IMPLEMENTED AT THE EPA WET LIMESTONE SCRUBBER FACILITY. THE PROGRAM WAS PART OF A PROJECT TO PREPARE A SET OF QUALITY ASSURANCE GUIDELINES FOR DEMONSTRATION PROJECTS.

DISPOSAL OF COAL PREPARATION WASTES: ENVIRONMENTAL CONSIDERATIONS
E. H. WEWERKA, J. M. WILLIAMS, M. E. VANDERBORGH
LASL/ERDA
10/76,

CONTAMINANTS IN COALS AND COAL RESIDUES
E. M. WEWERKA, J. M. WILLIAMS, M. E. VANDERBORGH
LASL/ERDA
10/76,

ASSESSMENT AND CONTROL OF ENVIRONMENTAL CONTAMINATION FROM TRACE ELEMENTS IN COAL PROCESSING WASTES
E. F. WEWERKA, J. M. WILLIAMS, P. L. WANEK
LASL/ERDA
00/00,

RECOVERY OF LIME AND MAGNESIUM IN POTABLE WATER TREATMENT
C. G. THOMPSON AND G. A. MOONEY
BLACK, CROW, & EIDSNESS, INC./EPA
12/76, EPA-600/2-76-285,

TRACE ELEMENT CHARACTERIZATION AND REMOVAL/RECOVERY FROM COAL AND COAL WASTES
E. F. WEWERKA
LASL/ERDA
09/76,

SOLUBILITY OF TRACE ELEMENTS IN COAL FLY ASH
D. R. DREESEN, L. E. WANGEN, E. S. GLADNEY, AND J. M. OWENS
LASL/ERDA
00/76,

CONOCO DOLOMITE HOT GAS CLEAN-UP SYSTEM
E. D. OLIVER AND K. T. SEBRAU
STANFORD RESEARCH INSTITUTE/EPA
00/76, EPA-600/2-76-086,

EPA AND ERDA HIGH-TEMPERATURE/HIGH-PRESSURE PARTICULATE CONTROL PROGRAMS
R. A. KENNEDY, H. DHILLON, AND J. B. TRUETT
MITRE CORPORATION/EPA
02/77, EPA-600/7-77-013,
DESCRIBES AND COMPARES CURRENT PROJECTS SPONSORED BY EPA AND ERDA, RELATING TO THE CONTROL OF PARTICULATE MATTER IN FUEL GAS STREAMS AT HIGH TEMPERATURES (1000 TO 2000 F) AND HIGH PRESSURES (5 ATM AND GREATER). THE DESCRIPTIONS DOCUMENT EACH PROJECT AND PROVIDE A NARRATIVE STATEMENT OF OBJECTIVES AND TECHNOLOGY INVOLVED.

HIGH-TEMPERATURE DESULFURIZATION OF LOW-BTU GAS
G. P. CURRAN, B. J. KOCH, B. FASEN, H. PELL, AND E. GORIN
CONSOLIDATION COAL COMPANY/EPA
04/77, EPA-600/7-77-031,
DESCRIBES & GIVES RESULTS OF ECONOMIC STUDIES OF A PROCESS FOR DESULFURIZING LOW-BTU FUEL GAS. EXPERIMENTAL DATA ARE PRESENTED IN SEVERAL AREAS: DESULFURIZATION & REGENERATION ACTIVITY OF DOLOMITES AS A FUNCTION OF CYCLES; BATCH STUDIES TO DETERMINE VARIABLE EFFECTS & RATE DATA;& PARTICULATE & ALKALI REMOVAL AT HIGH TEMPERATURE; CHANCE REACTION STUDIES; AND PROCESS IMPROVEMENT STUDIES.

EPA FABRIC FILTRATION STUDIES: 3. PERFORMANCE OF FILTER BAGS MADE FROM EXPANDED PTFE LAMINATE
ROBERT P. DONOVAN, BOBBY E. DANIEL, AND JAMES H. TURNER
EPA/EPA
12/76, EPA600/2-76-168C,
THE REPORT GIVES RESULTS OF AN EVALUATION OF FABRIC FILTERS MADE OF AN EXPANDED POLYTETRAFLUOROETHYLENE FILM SUPPORTED ON A NOMEX NOMEX SCRIM-THE GORE TEX/NOMEX FABRIC. FILTRATION EFFICIENCY WAS VERY HIGH AND OTHER PERFORMANCE PARAMETERS (DRAG & EFFECTIVE CAKE RESISTANCE), ACCEPTABLE. BECAUSE OF THE SMALL FIBER DIMENSIONS AND SPACING OF THE FILM, THE DOMINANT MECHANISM FOR PARTICLE REMOVAL APPEARS TO BE SIEVING.

PARTICULATE CONTROL MOBILE TEST UNITS: SECOND YEAR'S OPERATION
D. L. ZANDERS
MONSANTO RESEARCH CORPORATION/EPA
01/77, EPA-600/2-77-042,
SUMMARIZES THE SECOND YEAR'S OPERATION OF EPA-OWNED MOBILE TEST UNITS. UNIT USE DIVIDES INTO 2 PRINCIPAL AREAS: (1) 3 UNITS ARE DESIGNED FOR USE IN THE FIELD TO STUDY THE APPLICABILITY OF DIFFERENT METHODS FOR CONTROLLING FINE PARTICULATE EMMITED FROM A WIDE VARIETY OF SOURCES; AND (2) A FOURTH UNIT IS DESIGNED TO DEMO. THE FEASIBILITY OF UNCONVENTIONAL ENERGY SUPPLY SYSTEMS TO SUPPORT RESIDENTIAL AND COMMERCIAL BLDGS.

CATEGORY - FLUE GAS CLEANING

PUBLICATION

FILTER CAKE REDEPOSITION IN A PULSE-JET FILTER
DAVID LEITH AND MELVIN W. FIRST
HARVARD SCHOOL OF PUBLIC HEALTH/EPA
03/77, EPA-600/7-77-022,
THE REPORT GIVES RESULTS OF A PILOT-SCALE STUDY OF PULSE-JET FILTER CLEANING, A PROCESS THAT IS INEFFECTIVE TO THE EXTENT THAT COLLECTED DUST REDEPOSITS, RATHER THAN FALLING TO THE HOPPER. A MATHEMATICAL MODEL BASED ON EXPERIMENTAL RESULTS WAS DEVELOPED TO DESCRIBE DUST TRANSFER FROM BAG TO BAG, REDEPOSITION ON THE PULSED BAG, AND MIGRATION TO THE HOPPER.

MECHANISM FOR ASH ASSISTED SLUDGE DEWATERING
F. J. MICALE
SINCLAIR LAB,LEHIGH UNIVERSITY/EPA
12/76, EPA-600/2-76-297, NTIS-PB 261 070
THE ABILITY OF VARIOUS ADDITIVES TO IMPROVE THE DEWATERABILITY OF ACTIVATED SLUDGE WAS DETERMINED AND THE SURFACE PROPERTIES OF ADDITIVES CHARACTERIZED IN ORDER TO ARRIVE AT A MECHANISM FOR CONDITIONING OF ACTIVATED SLUDGE. THE PRIMARY ADDITIVES INVESTIGATED WERE ,FLY ASH AND 3 TYPES OF SLUDGE INCINERATOR ASH. ALL 4 ASHES GREATLY INCREASED THE RATE OF SETTLING OF ACTIVATED SLUDGE. REPEATED WASHING DECREASED THE RATE.

ANALYSIS AND SIMULATION OF RECYCLE SO2-LIME SLURRY IN TCA SCRUBBER SYSTEM
C. Y. WEN AND FRED K. FONG
WEST VIRGINIA UNIVERSITY/EPA
03/77, EPA-600/7-77-026,
GIVES RESULTS OF AN ANALYSIS OF FLUE GAS DESULFURIZATION BY A TURBULENT CONTACT ABSORBER EMPLOYING LIME SLURRY, INCLUDING THE DEVELOPMENT OF PERFORMANCE EQUATIONS FOR THE SCRUBBER-HOLD TANK RECYCLE SYSTEM. PERFORMANCE CHARACTERISTICS INCL. PRESSURE DROP OF THE SCRUBBER, CO2 & SO2 ABSORPTIONS, & LIME UTILIZATION.

FRACTIONAL EFFICIENCY OF AN ELECTRIC ARC FURNACE BAGHOUSE
REED W. CASS AND JOHN E. LANGLEY
GCA, TECHNOLOGY DIVISION/EPA
03/77, EPA-600/7-77-023,
GIVES RESULTS OF AN EVALUATION OF THE PERFORMANCE OF A FABRIC FILTER SYSTEM CONTROLLING EMISSIONS FROM EITHER ONE OR TWO 30-TON ELECTRIC ARC FURNACES PRODUCING A HIGH-STRENGTH, LOW-ALLOY SPECIALTY STEEL. THE EVALUATION INVOLVED MEASURING THE SYSTEM'S TOTAL MASS COLLECTION EFFICIENCY & APPARENT FRACTIONAL COLLECTION EFFICIENCY.

STATEMENT OF SULFATES RESEARCH APPROACH
(INDIVIDUAL AUTHORS NOT IDENTIFIED)
EPA/EPA
02/77, EPA-600/8-77-004,
THIS DOCUMENT PRESENTS A STRATEGY TO INVESTIGATE THE SULFATE QUESTION. IT IS INTENDED TO SERVE AS A LONG-TERM PLANNING INSTRUMENT. THE STRATEGY STATEMENT IS DIVIDED INTO 4 RESEARCH AREAS: HEALTH EFFECTS, ECOLOGICAL EFFECTS, ATMOSPHERIC CHEMISTRY AND TRANSPORT, AND MEASUREMENT METHODOLOGY AND INSTRUMENTATION.

CATEGORY - DIRECT COMBUSTION

PUBLICATION

PROCEDURES MANUAL FOR ENVIRONMENTAL ASSESSMENT OF FLUIDIZED-BED COMBUSTION PROCESSES
M. I. ABELSON AND W. A. LOWENBACH
MITRE CORPORATION/EPA
01/77, EPA-600/7-77-009,
THE DOCUMENT DESCRIBES RECOMMENDED PROCEDURES FOR SAMPLING AND ANALYSIS, FOR EVENTUAL USE BY SOURCE TESTING CONTRACTORS, IN SUPPORT OF THE ENVIRONMENTAL ASSESSMENT OF FLUIDIZED-BED COMBUSTION (FBC) TECHNOLOGY. IT INCLUDES A COMPENDIUM OF METHOD OPTIONS, DESCRIBING THE SAMPLING AND ANALYTICAL STATE-OF-THE-ART.

METHOD FOR ANALYZING EMISSIONS FROM ATMOSPHERIC FLUIDIZED-BED COMBUSTOR
E. L. HERRMAN, A. LEVY, G. W. FELTON, K. T. LIU, J. H. ALLAN, AND H. HACK
BATTELLE-COLUMBUS LAB/EPA
04/44, EPA-600/7-77-034,
DESCRIBES AN EXPERIMENTALLY DEVELOPED METHOD TO COMPREHENSIVELY SAMPLE AND ANALYZE AN ATMOSPHERIC-PRESSURE FLUIDIZED-BED COMBUSTION (FBC) UNIT. INCLUDES A GENERAL DISCUSSION OF THE PERTINENT AREAS LIKELY TO BE ENCOUNTERED IN SAMPLING & ANALYZING SPECIMENS FROM FBC UNITS.

APPLICATION OF FLUIDIZED-BED TECHNOLOGY TO INDUSTRIAL BOILERS
H. H. FARMER, E. H. HAGEL, AND F. M. SPOONER
EXXON RESEARCH & ENGINEERING COMPANY/EPA
01/77, EPA-600/7-77-011,
GIVES RESULTS OF A STUDY OF THE APPLICATION POTENTIAL OF COAL-FIRED FLUIDIZED-BED BOILERS (FBB'S) IN THE INDUSTRIAL USE SECTOR. STUDY RESULTS SUGGEST THAT INDUSTRIAL FBB'S BURNING HIGH-SULFUR COAL OFFER A COST ADVANTAGE OVER EQUIVALENT CONVENTIONAL COAL-FIRED BOILERS WITH FLUE GAS DESULFURIZATION; WITH LOW-SULFUR COALS CAPABLE OF MEETING EMISSION STANDARDS WITHOUT SO2 CONTROLS, THE COSTS ARE COMPARABLE.

THE U.S. ENVIRONMENTAL PROTECTION AGENCY'S FLUIDIZED-BED COMBUSTION PROGRAM, FY 1976
(INDIVIDUALS NOT IDENTIFIED)
BATTELLE-COLUMBUS LAB/EPA
02/77, EPA-600/7-77-012,
DESCRIBES THE OBJECTIVES, CONTENT, AND FISCAL YEAR 1976 PROGRESS OF THE R&D PROGRAM BEING CONDUCTED BY EPA FOR ENVIRONMENTAL CHARACTERIZATION OF THE FLUIDIZED-BED COMBUSTION (FBC) PROCESS. EPA'S FBC PROGRAM IS A CONTRACT PROGRAM, UTILIZING A VARIETY OF CONTRACTORS, AIMED AT ENSURING THAT ALL POTENTIAL ENVIRON. PROBLEMS ASSOCIATED WITH THIS DEVELOPING ENERGY TECHNOLOGY ARE IDENTIFIED AND ADDRESSED.

SORBENT SELECTION FOR THE CAFB RESIDUAL OIL GASIFICATION DEMONSTRATION PLANT
E. P. O'NEILL, D. L. KEAIRNS, AND M. A. LAVIN
WESTINGHOUSE RESEARCH LAB/EPA
03/77, EPA-600/7-77-029,
GIVES RESULTS OF EVALUATIONS OF LIMESTONES FROM TEXAS AND MEXICO AS CANDIDATE SULFUR SORBENTS FOR THE CHEMICALLY ACTIVE FLUID-BED (CAFB) GASIFICATION DEMONSTRATION PLANT AT SAN BENITO, TEXAS.

FIRST TRIALS OF CAFB PILOT PLANT ON COAL
D. LYON
ESSO RESEARCH CENTRE/EPA
03/77, EPA-600/7-77-027,
GIVES RESULTS OF A MINIRUN, CARRIED OUT ON A 0.75-MWt CONTINUOUS, CHEMICALLY ACTIVE FLUIDIZED-BED PILOT PLANT DURING JULY-AUGUST 1976, AS PART OF A PROGRAM TO EXTEND THE CAFB PROCESS TO OPERATE ON COAL. THE QUALITY OF THE GAS PRODUCED WAS SIMILAR TO, THAT FOR OIL. THE TARGET OF 98% LIGNITE UTILIZATION WAS APPROACHED IN THE MINIRUN UNDER CONDITIONS WHICH WERE FAR FROM OPTIMUM.

PRELIMINARY ENVIRONMENTAL ASSESSMENT OF THE CAFB
A. S. WERNER, C. W. YOUNG, H. I. BORNSTEIN, R. M. BRADWAY, M. T. MILLS, AND D. F. DUROCHER
GCA CORPORATION/EPA
00/76, EPA-600/7-76-017, NTIS-PB 262 001

RESIDUM AND RESIDUAL FUEL OIL SUPPLY AND DEMAND IN THE UNITED STATES, 1973-1985
J. HONK JR., R. HENINO, E. QUACKENBUSH, N. GODLEY, L. CLARK, ET. AL.
ARTHUR D. LITTLE, INC./EPA
00/76, EPA-600/2-76-166, NTIS-PB 255 625
GIVES RESULTS OF A STUDY OF THE SUPPLY & DEMAND OF PETROLEUM RESIDUUM IN THE U.S., NOW & IN 1985, WITH PARTICULAR EMPHASIS ON RESIDUAL FUEL OIL. THE REPORT DETAILS THE HISTORICAL RESIDUUM BALANCE, THEN EXAMINES THE MAJOR FACTORS WHICH AFFECT THE SUPPLY AND DEMAND.

DEVELOPMENT PROGRAM ON PRESSURIZED FLUIDIZED-BED COMBUSTION
G. VOGEL, L. JOHNSON, R. CUNNINGHAM, B. HUBBLE, S. LEE, J. LENC, ET. AL.
ARGONNE NATIONAL LAB/EPA
00/76, EPA-600/7-76-019,
REPORTS PROGRESS OF AN EVALUATION OF THE FEASIBILITY OF USING FLUIDIZED-BED COMBUSTORS IN POWER & STEAM PLANTS. THE CONCEPT INVOLVES BURNING FUELS SUCH AS COAL IN A FB OF EITHER A LIMESTONE OR A SYNTHETICALLY PREPARED CA-CONTAINING STONE.

STUDIES OF THE PRESSURIZED FLUIDIZED-BED COAL COMBUSTION PROCESS
R. C. HOKE, R. R. BERTAND, N. S. NUTKIS, D. D. KINZLER, L. A. RUTH, AND H. W. GREGORY
EXXON RESEARCH AND ENGINEERING COMPANY/EPA
00/76, EPA-600/7-76-011, NTIS-PB 260 478
GIVES RESULTS OF STUDIES OF THE ENVIRONMENTAL ASPECTS OF THE PRESSURIZED FLUIDIZED-BED COAL COMBUSTION (FBCC) PROCESS, USING 2 EXPERIMENTAL FACILITIES. OPERATING RESULTS FROM BOTH FACILITIES INDICATE THAT SO2 EMISSIONS CAN BE CONTROLLED TO MEET CURRENT EPA NEW SOURCE PERFORMANCE STANDARDS FOR COAL-FIRED UTILITY BOILERS WITH EITHER LIMESTONE OR DOLOMITE SORBENTS.

CATEGORY - SYNTHETIC FUELS

PUBLICATION

MEETING REPORT: ADVANCED FOSSIL FUELS SECTOR GROUP-LAS VEGAS, 25 AUGUST 1976
(INDIVIDUAL AUTHORS NOT IDENTIFIED)
STANFORD RESEARCH INSTITUTE/EPA
00/76, EPA-600/7-76-023, NTIS-PB 260 377

IMPACTS OF SYNTHETIC LIQUID FUEL DEVELOPMENT-AUTOMOTIVE MARKET: VOL. I SUMMARY
E. H. DICKSON, R. V. STEELE, E. E. HUGHES, B. L. WALTON, B. A. ZINK, ET. AL.
STANFORD RESEARCH INSTITUTE/EPA
00/76, EPA-600/7-76-004A, NTIS-PB 255 994

WATER REQUIREMENTS FOR STEAM-ELECTRIC POWER GENERATION & SYNTHETIC FUEL PLANTS IN THE WESTERN U.S.
H. GOLD, D. J. GOLDSTEIN, R. F. PROBSTEIN, J. S. SHEN, AND J. D. YUNG
WATER PURIFICATION ASSOCIATES/EPA
04/77, EPA-600/7-77-037,
DESCRIBES THE PROCEDURES FOR THE DETAILED DETERMINATION OF THE WATER CONSUMED FOR MINING & PROCESSING COAL AND OIL SHALE, & FOR DETERMINING THE RESIDUALS GENERATED. THE PROCESSES CONSIDERED ARE LURGI, SYNTHANE, & SYNTHOIL FOR COAL CONVERSION, TOSCOIL FOR SHALE CONVERSION, COAL-FIRED STEAM ELECTRIC POWER GENERATION & SLURRY PIPELINE. CONSUMPTIVE WATER USE & SOLIDS RESIDUALS ARE DETERMINED FOR 21 PLANT-SITE COMBINATIONS.

RESEARCH NEEDS RELATED TO AIR POLLUTION FROM COAL CONVERSION PROCESS
D. S. SHINER
OAK RIDGE NATIONAL LAB/ERDA
00/00,

PANEL 4: SYNFUEL UTILIZATION: ENVIRONMENTAL AND HEALTH EFFECTS
J. R. BLAIR AND J. L. EPLER
OAK RIDGE NATIONAL LAB/ERDA
00/00,

FUEL GAS ENVIRONMENTAL IMPACT
F. L. ROBSON AND W. A. BLECHER
UNITED TECHNOLOGIES RESEARCH CENTER/EPA
00/76, EPA-600/2-76-153, NTIS-PB 257 134
AS THEY RELATE TO COMBINED CYCLE POWER GENERATION, THE REPORT GIVES RESULTS OF AN EVALUATION OF THE TECHNICAL & ECONOMIC CONSIDERATIONS OF ATMOSPHERIC PRESSURE, OXYGEN-BLOWN COAL GASIFIERS & PRESSURIZED, AIR-BLOWN, PARTIAL-OXIDATION RESIDUAL-OIL GASIFIERS.

PRODUCTION AND PROCESSING OF U.S. TAR SANDS - AN ENVIRONMENTAL ASSESSMENT
M. A. FRAZIER, D. W. HISSONG, W. E. BALLANTYNE, AND E. J. MEZEY
BATTELLE COLUMBUS LAB/EPA
12/76, EPA-600/7-76-035,
RESULTS OF A PRELIMINARY STUDY TO ASSESS THE POTENTIAL PRIMARY ENVIRONMENTAL IMPACTS OF PRODUCTION AND PROCESSING OF U. S. TAR SANDS BITUMEN. CURRENTLY TWO BASIC WAYS FOR PRODUCING TAR SANDS EXIST...MINING AND IN-SITU. PRODUCING TAR SANDS BY MINING WOULD BE SIMILIAR TO COAL MINING METHODS. CURRENTLY THERE IS NO IN-SITU PRODUCTION TECHN. BUT IT IS BELIEVED THAT ENVIRON. IMPACT WOULD BE SIMILIAR TO OIL FIELD PRODUCTION.

SYMPOSIUM PROCEEDINGS: ENVIRONMENTAL ASPECTS OF FUEL CONVERSION TECHNOLOGY, II (DEC. 1975 HOLLYWOOD, FLA.)
F. A. AYER
RESEARCH TRIANGLE INSTITUTE/EPA
00/76, EPA-600/2-76-149, NTIS-PB 257 182
THE REPORT COVERS EPA'S SECOND SYMPOSIUM ON THE ENV. ASPECTS OF FUEL CONVERSION TECHNOLOGY. THE SYMPOSIUM WAS HELD DEC. 15-18, 1975. ITS MAIN OBJECTIVE WAS TO REVIEW & DISCUSS ENV. RELATED INFORMATION IN THE FIELD OF FUEL CONVERSION TECHNOLOGY.

IMPACTS OF SYNTHETIC LIQUID FUEL DEVELOPMENT-AUTOMOTIVE MARKET: VOL. II
E. H. DICKSON, R. V. STEELE, E. E. HUGHES, B. L. WALTON, B. A. ZINK, ET. AL.
STANFORD RESEARCH INSTITUTE/EPA
00/76, EPA-600/7-76-004B, NTIS-PB 255 995

MEETING REPORT: ADVANCED FOSSIL FUELS SECTOR GROUP, CINCINNATI, 31 MARCH 1976
(INDIVIDUAL AUTHORS NOT IDENTIFIED)
STANFORD RESEARCH INSTITUTE/EPA
00/76, EPA-600/7-76-001, NTIS-PB 255 117

FUEL CONTAMINANTS: VOLUME II. REMOVAL TECHNOLOGY EVALUATIONS
E. J. MEZEY, S. SINGH, AND D. W. HISSONG
BATTELLE COLUMBUS LAB/EPA
00/76, EPA-600/2-76-177B, NTIS-PB 260 475
REVIEWS THE METHODS USED TO REMOVE SOURCES OF SULFUR, NITROGEN, & TRACE ELEMENT POLLUTANTS FROM COAL, COAL LIQUIDS, PETROLEUM, TAR SAND OILS, & SHALE OILS. THE EVALUATION IS RESTRICTED TO SYSTEMS THAT REMOVE CONTAMINANTS BEFORE COMBUSTION. THE EVALUATIONS GENERALLY INDICATE THAT NO SINGLE METHOD IS EFFECTIVE FOR REMOVING ALL OF THE CONTAMINANTS FROM THE FUELS UNDER CONSIDERATION.

CATEGORY - SYNTHETIC FUELS

PUBLICATION

FUEL CONTAMINANTS: VOLUME I. CHEMISTRY
E. J. MEZEY, S. SINGH, AND D. W. HISSONG
BATTELLE COLUMBUS LAB/EPA
00/76, EPA-600/2-76-177A, NTIS-PB 256 020
REVIEWS INFORMATION ON THE CHARACTERISTICS OF SOLID & LIQUID FUELS. SPECIFICALLY, IT DEALS WITH THE CHEMICAL & PHYSICAL CHARACTERISTICS OF COMPONENTS OF THE FUEL WHICH ARE SOURCES OF SULFUR, NITROGEN, & TRACE ELEMENT POLLUTANTS WHEN THAT FUEL IS UTILIZED. THE REVIEW SUGGESTS THAT AT LEAST PART OF THE SULFUR & MOST OF THE NITROGEN ORIGINATE FROM COMPOUNDS COMMON TO THE FUELS REVIEWED (COAL, PETROLEUM, TAR SAND OIL, & OIL SHALE).

EPA PROGRAM STATUS REPORT--SYNTHETIC FUELS PROGRAM
B. TRUETT, R. G. MURRAY, AND G. FOLEY
STANFORD RESEARCH INSTITUTE/EPA
00/75, EPA-600/2-75-070, NTIS-PB 247 140

CATEGORY - THERMAL CONTROL

PUBLICATIONS

A DEMONSTRATION OF THERMAL WATER UTILIZATION IN AGRICULTURE
JAMES W. BERRY AND H. H. MILLER, JR.
EPA/EPA
04/74, EPA-660/2-74-011,

CATEGORY - IMPROVED EFFICIENCY

PUBLICATIONS

RESIDENTIAL OIL FURNACE SYSTEM OPTIMIZATION-PHASE II
L. P. COMBS AND A. S. OKUDA
ROCKETDYNE DIVISION,ROCKWELL INTERNATIONAL/EPA
01/77, EPA-600/2-77-028,
DESCRIBES THE SECOND OF A 2-PHASE INVESTIGATION INTO WAYS TO IMPROVE THE AIR POLLUTANT EMISSION AND THERMAL EFFICIENCY CHARACTERISTICS OF RESIDENTIAL OIL FURNACES. A PROTOTYPE, LOW-EMISSION, WARM-AIR FURNACE WAS ASSEMBLED AND TESTED. COMPARED WITH ESTIMATED AVERAGE CHARACTERISTICS OF EXISTING RESIDENTIAL FURNACES AND BOILERS, NITROGEN OXIDES EMISSIONS WERE REDUCED BY 65%, & STEADY-STATE EFFICIENCY WAS INCREASED BY 10%.

ENVIRON. CONSIDERATIONS OF SELECTED ENERGY CONSERVING MANUFAC. PROCESS OPTIONS VOL. XI GLASS
(INDIVIDUAL AUTHORS NOT IDENTIFIED)
ARTHUR D. LITTLE, INC./EPA
12/76, EPA-600/7-76-034K,
VOL. XI DEALS WITH THE GLASS INDUSTRY AND EXAMINES 5 ALTERNATIVES: (1) COAL GASIFICATION, (2) DIRECT COAL FIRING, (3) ELECTRIC MELTING, (4) COAL, HOT GAS REGENERATION, AND (5) BATCH PREHEATING IN TERMS OF THEIR IMPACT ON RELATIVE PROCESS ECONOMICS AND THEIR ENVIRONMENTAL/ENERGY CONSEQUENCES.

DEVELOPMENT & TESTING OF A WASTEWATER RECYCLER & HEATER
VICTOR J. GUARINO
/EPA
06/76,

ENVIRON. CONSIDERATIONS OF SELECTED ENERGY CONSERVING MANUFAC. PROCESS OPTIONS VOL. VI OLEFINS
(INDIVIDUAL AUTHORS NOT IDENTIFIED)
ARTHUR D. LITTLE, INC./EPA
12/76, EPA-600/7-76-034F,
VOL. VI DEALS WITH THE OLEFINS INDUSTRY AND UTILIZATION FOR NAPHTHA AND ATMOSPHERIC GAS OIL AS ALTERNATIVE FEEDSTOCK TO ETHANE-PROPANE. RELATIVE PROCESS ECONOMICS AND ENVIRONMENTAL ENERGY CONSEQUENCES OF BOTH NAPHTHA AND ATMOSPHERIC OIL CRACKING ARE EXAMINED AND COMPARED WITH A BASE LINE PLANT USING ETHANE PROPANE AS A FEEDSTOCK, BRIEF ANALYSIS OF EMERGING OLEFIN PRODUCING TECH. INCLUDED

ENVIRON. CONSIDERATIONS OF SELECTED ENERGY CONSERVING MANUFAC. PROCESS OPTIONS VOL. VII AMMONIA
(INDIVIDUAL AUTHORS NOT IDENTIFIED)
ARTHUR D. LITTLE, INC./EPA
12/76, EPA-600/7-76-034G,
VOL. VII DEALS WITH THE AMMONIA INDUSTRY AND ANALYSIS OF THE PRODUCTION BASED ON COAL GASIFICATION AND THE PRODUCTION OF AMMONIA BASED ON HEAVY OIL GASIFICATION IN TERMS OF PROCESS ECONOMICS AND ENVIRONMENTAL/ENERGY CONSEQUENCES.

ENVIRON. CONSIDERATIONS OF SELECTED ENERGY CONSERVING MANUFAC. PROCESS OPTIONS VOL. IX TEXTILE
(INDIVIDUAL AUTHORS NOT IDENTIFIED)
ARTHUR D. LITTLE, INC./EPA
12/76, EPA-600/7-76-034I,
VOL. IX DEALS WITH THE TEXTILE INDUSTRY AND EXAMINES THE ENVIRONMENTAL ENERGY AND ECONOMIC IMPACTS OF THREE "MODEL" TECHNOLOGIES, ALL IN A COMPARISON WITH A "BASE LINE" TECHNOLOGY REPRESENTING THE BEST OF PRESENT TEXTILE INDUSTRY PRACTICE.

ENVIRON. CONSIDERATIONS OF SELECTED ENERGY CONSERVING MANUFAC. PROCESS OPTIONS VOL. X CEMENT
(INDIVIDUAL AUTHORS NOT IDENTIFIED)
ARTHUR D. LITTLE, INC./EPA
12/76, EPA-600/7-76-034J,
VOL. X DEALS WITH THE CEMENT INDUSTRY AND EXAMINES 4 OPTIONS: (1) SUSPENSION PREHEATER, (2) FLASH CALCINER, (3) FLUID-BED CEMENT PROCESS, AND (4) CONVERSION TO COAL FUEL FROM OIL AND NATURAL GAS, ALL IN TERMS OF ENVIRONMENTAL/ENERGY CONSEQUENCES.

ENVIRON. CONSIDERATIONS OF SELECTED ENERGY CONSERVING MANUFAC. PROCESS OPTIONS VOL. V PULP AND PAPER
(INDIVIDUAL AUTHORS NOT IDENTIFIED)
ARTHUR D. LITTLE, INC./EPA
12/76, EPA-600/7-76-034E,
VOL. V EXAMINES 4 OPTIONS IN THE PULP AND PAPER INDUSTRY IN DEPTH: (1) ALKALINE-OXYGEN PULPING, (2) KRAFSON EFFLUENT-FREE KRAFT PROCESS, (3) THERMOMECHANICAL PULPING, AND (4) DE-INKING OF OLD NEWSPRINT; ALL IN TERMS OF RELATIVE ECONOMICS AND ENVIRONMENTAL/ENERGY CONSEQUENCES.

ENVIRON. CONSID. OF SELECT ENERGY CONSERVING MANUFAC. PROCESS OPTIONS VOL. I INDUSTRY SUMMARY REPORT
(INDIVIDUAL AUTHORS NOT IDENTIFIED)
ARTHUR D. LITTLE, INC./EPA
12/76, EPA-600/7-76-034A,
THIS STUDY ASSESSES THE LIKELIHOOD OF NEW PROCESS TECHNOLOGY AND NEW PRACTICES BEING INTRODUCED BY ENERGY INTENSIVE INDUSTRIES AND EXPLORES THE ENVIRONMENTAL IMPACTS OF SUCH CHANGES. SPECIFICALLY, VOL. I PRESENTS THE OVERALL SUMMATION AND IDENTIFICATION OF RESEARCH NEEDS AND AREAS OF HIGHEST OVERALL PRIORITY.

ENVIRON. CONSID. OF SELECT ENERGY CONSERVING MANUFAC. PROCESS OPTIONS VOL. II INDUSTRY PRIORITY REPORT
(INDIVIDUAL AUTHORS NOT IDENTIFIED)
ARTHUR D. LITTLE, INC./EPA
12/76, EPA-600/7-76-034B,
VOL. II, PREPARED EARLY IN THE STUDY, PRESENTS AND DESCRIBES THE OVERVIEW OF THE INDUSTRIES CONSIDERED AND PRESENTS THE METHODOLOGY USED TO SELECT INDUSTRIES.

CATEGORY - IMPROVED EFFICIENCY

PUBLICATION

ENVIRON. CONSIDERATIONS OF SELECTED ENERGY CONSERVING MANUFAC. PROCESS OPTIONS VOL. III IRON & STEEL
(INDIVIDUAL AUTHORS NOT IDENTIFIED)
ARTHUR D. LITTLE, INC./EPA
12/76, EPA-600/7-76-034C,
VOL. III DEALS WITH THE IRON AND STEEL INDUSTRY AND EXAMINES 4 ALTERNATIVES: (1) RECOVERY OF CARBON MONOXIDE FROM BASIC OXYGEN PROCESS, (2) EXTERNAL DESULFURIZATION OF BLAST-FURNACE HOT METAL, (3) CONVERSION FROM WET TO DRY COKE QUENCHING, AND (4) DIRECT REDUCTION OF IRON ORE, ALL IN TERMS OF A RELATIVE PROCESS ECONOMICS AND ENVIRONMENTAL/ENERGY INTERFACE.

ENVIRON. CONSIDERATIONS OF SELECTED ENERGY CONSERVING MANUFAC. PROCESS OPTIONS VOL. IV PETROLEUM REFINING
(INDIVIDUAL AUTHORS NOT IDENTIFIED)
ARTHUR D. LITTLE, INC./EPA
12/76, EPA-600/7-76-034D,
VOL. IV DEALS WITH THE PETROLEUM REFINING INDUSTRY AND EXAMINES 5 OPTIONS: (1) DIRECT COMBUSTION OF ASPHALT IN PROCESS HEATERS AND BOILERS, (2) HYDROCRACKING OF VACUUM BOTTOMS, (3) FLEXICOKING OF VACUUM BOTTOMS, (4) INTERNAL ELECTRICAL POWER GENERATION, (5) HYDROGEN GENERATION BY PARTIAL OXIDATION, ALL IN TERMS OF PROCESS ECONOMICS AND ENVIRONMENTAL/ENERGY CONSEQUENCES.

GASIFICATION/COMBINED-CYCLE SYSTEM FOR ELECTRIC POWER GENERATION
J. B. TRUETT
MITRE CORPORATION/EPA
00/76, EPA-600/2-76-085, NTIS-PB 251 823

ENVIRON. CONSID. OF SELECT ENERGY CONSERVING MANUFAC. PROCESS OPTIONS VOL. XIII PHOSPHORUS/PHOSPHORIC ACID
(INDIVIDUAL AUTHORS NOT IDENTIFIED)
ARTHUR D. LITTLE, INC./EPA
12/76, EPA-600/7-76-034M,
VOL. XIII DEALS WITH THE PHOSPHORUS AND PHOSPHORIC ACID INDUSTRY AND EXAMINES 4 ALTERNATIVES: (1) CHEMICAL CLEANUP OF WET-PROCESS PHOSPHORIC ACID, (2) SOLVENT EXTRACTION PROCESS FOR WET-PROCESS PHOSPHORIC ACID, (3) BYPRODUCT SULFURIC ACID FOR WET-PROCESS PHOSPHORIC ACID, AND (4) "STRONG ACID" SYSTEM FOR WET-PROCESS PHOSPHORIC ACID IN TERMS OF RELATIVE PROCESS ECONOMICS AND ENVIRONMENTAL/ENERGY CONSEQUENCES.

ENVIRON. CONSIDERATIONS OF SELECTED ENERGY CONSERVING MANUFAC. PROCESS OPTIONS VOL. XII CHOIR-ALKALI
(INDIVIDUAL AUTHORS NOT IDENTIFIED)
ARTHUR D. LITTLE, INC./EPA
12/76, EPA-600/7-76-034L,
VOL. XII EXAMINES OPTIONS IN THE CHLOR-ALKALI INDUSTRY RELATING TO DIAPHRAM AND MERCURY CELL TECHNOLOGY, INCLUDING DIMENSIONALLY STABLE ANODES, ION-EXCHANGE MEMBRANES AND STABILIZED ASBESTOS DIAPHRAMS IN TERMS OF RELATIVE PROCESS ECONOMICS AND ENVIRONMENTAL/ENERGY CONSEQUENCES.

HEAT PUMPS: SUBSTITUTES FOR OUTMODED FOSSIL-FUELED SYSTEMS
E. A. PICKLESIMER
LOCKHEED MISSILES AND SPACE CO., INC./EPA
04/77, EPA-600/7-77-035,
THE REPORT REVIEWS THE STATE-OF-THE-ART RELATIVE TO DEVELOPMENT, CAPACITY AND ADEQUACY OF THE HEAT PUMP AS A POTENTIAL REPLACEMENT FOR OUTMODED FOSSIL-FUELED HEATING & COOLING SYSTEMS IN THE RESIDENTIAL & COMMERCIAL SECTOR. THE CONCLUSION IS REACHED THAT IT IS ECONOMICAL ONLY AS A TOTAL SPACE CONFORM SYSTEM.. THE HEAT PUMP WILL BE MORE ECONOMICAL TO OPERATE THAN COMPARABLE FOSSIL-FUELED HEATING SYSTEMS BY 1980.

PERFORMANCE OF EMISSION CONTROL DEVICES ON BOILERS FIRING MUNICIPAL SOLID WASTE AND OIL
J. E. GALESKI AND M. P. SHRAG
MIDWEST RESEARCH INSTITUTE/EPA
00/76, EPA-600/2-76-209, NTIS-PB 257 136
GIVES RESULTS OF ESTIMATING PARTICULATE FLUE GAS LOADINGS FOR COMBINED FIRING OF SHREDDED MUNICIPAL WASTE (MSW) & OIL, USING EXISTING DATA ON PARTICULATE EMISSIONS FROM OIL-FIRED ELECTRIC UTILITY BOILERS & FROM WATERFALL INCINERATORS FIRING EITHER WASTE OR WASTE-PLUS-COAL/OIL AUXILIARY FUEL.

FINE SHREDDING OF MUNICIPAL SOLID WASTE
K. P. ANANTH AND J. SHUM
MIDWEST RESEARCH INSTITUTE/EPA
00/76, EPA-600/2-76-208, NTIS-PB 257 105
GIVES AN OVERVIEW OF EQUIPMENT USED FOR MUNICIPAL SOLID WASTE (MSW) SIZE REDUCTION & DISCUSSES ITS PERFORMANCE & COST. OF THE 11 BASIC EQUIPMENT TYPES USED FOR SHREDDING MSW, ONLY HAMMERMILLS & GRINDERS FIND WIDE APPLICATION.

ENVIRON. CONSIDERATIONS OF SELECTED ENERGY CONSERVING MANUFAC. PROCESS OPTIONS VOL. XV FERTILIZER
(INDIVIDUAL AUTHORS NOT IDENTIFIED)
ARTHUR D. LITTLE, INC./EPA
12/76, EPA-600/7-76-034O,
VOL. XV DEALS WITH THE FERTILIZER INDUSTRY AND EXAMINES TWO AREAS IN WHICH ENERGY CONSERVATION AND POLLUTION CONTROL ARE IN CONFLICT: (1) REDUCTION OF NITROGEN OXIDE EMISSIONS FROM NITRIC ACID PLANTS AND SWITCHING FROM NATURAL GAS TO FUEL OIL FOR FIRING FERTILIZER DRYERS WHERE EMISSIONS ARE PRESENTLY CONTROLLED BY BAG FILTERS.

CATEGORY - IMPROVED EFFICIENCY

PUBLICATIONS

ENVIRON. CONSIDERATIONS OF SELECTED ENERGY CONSERVING MANUFAC. PROCESS OPTIONS VOL. VIII ALUMINA/ALUMINUM
(INDIVIDUAL AUTHORS NOT IDENTIFIED)
ARTHUR D. LITTLE, INC./EPA
12/76, EPA-600/7-76-034h,
VOL. VIII DEALS WITH THE ALUMINA/ALUMINUM INDUSTRY. THE REPORT EXAMINES THREE NEW PROCESS DEVELOPMENTS FOR PRODUCING ALUMINA FROM DOMESTIC WAYS AS ALTERNATIVES TO THE BAYER PROCESS, AND TWO PROCESS CHANGES FOR THE PRODUCTION OF ALUMINUM.

ENVIRON. CONSIDERATIONS OF SELECTED ENERGY CONSERVING MANUFAC. PROCESS OPTIONS VOL. XIV PRIMARY COPPER
(INDIVIDUAL AUTHORS NOT IDENTIFIED)
ARTHUR D. LITTLE, INC./EPA
12/76, EPA-600/7-76-034m,
VOL. XIV DEALS WITH THE PRIMARY COPPER INDUSTRY AND EXAMINES 6 ALTERNATIVES: (1) OUTOKUMPU FLASH SMELTING, (2) NORANDA PROCESS, (3) MITSUBISHI PROCESS, (4) OXYGEN USE IN SMELTING, (5) METAL RECOVERY FROM SLAGS (FLOTATION OR ELECTRIC FURNACE), AND (6) ARBITER PROCESS, ALL IN TERMS OF RELATIVE ECONOMICS AND ENVIRONMENTAL/ENERGY CONSEQUENCES.

CATEGORY - ADVANCED ENERGY SYSTEMS

PUBLICATION

PROCEEDINGS OF THE FIRST WORKSHOP ON SAMPLING GEOTHERMAL EFFLUENTS
(INDIVIDUAL AUTHORS NOT IDENTIFIED)
EPA/EPA
00/76, EPA-600/9-76-011, NTIS-PB 258 067
THIS IS A COMPILATION OF PAPERS PRESENTED AT THE FIRST IN A SERIES OF WORKSHOPS ON ENVIRONMENTAL MONITORING OF GEOTHERMAL ENERGY DEVELOPMENT. THE PURPOSE OF THIS WORKSHOP WAS TO CORRELATE THE EXCHANGE OF IN THOSE METHODS.

CATEGORY - ENV. TRANSPORT PROCESSES

PUBLICATION

BIO AVAILABILITY OF SEDIMENT SORBED NAPHTHALENES TO THE SIPUNCULID WORM
L. J. MOORE, J. W. ANDERSON, J. W. BLAYCOCK, D. L. WOODRUFF, AND S. L. STASSER
BATTELLE COLUMBUS LAB/ERDA
00/00,

CHARACTERIZATION OF VOLATILE HYDROCARBONS IN FLOWING SEAWATER SUPENSIONS OF NO. 2 FUEL OIL
B. E. BEAM AND J. W. BLAYCOCK
BATTELLE COLUMBUS LAB/ERDA
00/00,

CHAIRMAN'S SUMMARY OF ENVIRONMENTAL TRANSPORT AND EFFECTS
C. W. GEHRS AND M. WELLS
OAK RIDGE NATIONAL LAB/ERDA
00/00,

PARTITIONING OF POLYCYCLIC AROMATIC HYDROCARBONS BETWEEN DISSOLVED & PARTIAL PHASES IN NATURAL WATER
S. E. HEBBES
OAK RIDGE NATIONAL LAB/ERDA
00/00,

METABOLIC ALTERATION AND EXCRETION OF ANTHRACENE BY DAPHNIA PULEX
S. E. HEBBES AND G. F. RISI
OAK RIDGE NATIONAL LAB/ERDA
00/00,

LICHENS AS BIO-INDICATORS OF AIR QUALITY IN THE FOUR CORNERS REGION AND IN ALASKA
T. H. NASH
LASL/ERDA
09/76,

DIRECT ANALYSIS OF ORGANIC COMPOUNDS IN AQUEOUS BY-PRODUCTS FROM FOSSIL FUEL CONVERSION PROCESSES
C. H. HO, B. R. CLARK, AND M. R. GUZRIN
OAK RIDGE NATIONAL LAB/ERDA

FIRST ANNUAL REPORT ON WEATHER MODIFICATION EFFECTS ON COOLING TOWERS & SUMMARY DESCRIPTION OF BOOM 1
S. R. HANNA AND E. P. HOSKER, JR.
NOAA/ERDA
07/76,

USER'S GUIDE TO THE BOOM 1 MODEL
ANDREW FORD
LASL/ERDA
08/76,

POWER PLANT STACK PLUMES IN COMPLEX TERRAIN-AN APPRAISAL OF CURRENT RESEARCH
R. C. KOCH, W. G. BIGGS, P. H. HWANG, I. LEICHTER, K. S. PICKERING, E. S. SWADEY, AND J. L. SWIFT
GEOMET, INCORPORATED/EPA
03/77, EPA-600/7-77-020,
REVIEWS THE LITERATURE OF SCIENTIFIC STUDIES OF THE BEHAVIOR OF STACK PLUMES FROM FOSSIL-FUELED ELECTRIC POWER PLANTS IN COMPLEX TERRAIN. NON-CONSERVATIVE CHEMICAL TRANSFORMATION & DEPLETION, & CONSERVATIVE TRANSPORT & DIFFUSION OF POLLUTANTS ARE CONSIDERED. STUDIES OF SO2 OXIDATION RATES IN POWER PLANT PLUMES ARE DESCRIBED & THE PRIMARY MECHANISMS FOR CONVERSION TO SULFATE ARE DETAILED.

COOLING TOWER PLUME MODEL
(INDIVIDUAL AUTHORS NOT IDENTIFIED)
EPA/EPA
00/76, EPA-600/3-76-100, NTIS-PB 259 971
A REVIEW OF RECENTLY REPORTED COOLING TOWER PLUME MODELS YIELDS NONE THAT IS UNIVERSALLY ACCEPTED. THE ENTRAINMENT & DRAG MECHANISMS & THE EFFECT OF MOISTURE ON THE PLUME TRAJECTORY ARE PHENOMENA WHICH ARE TREATED DIFFERENTLY BY VARIOUS INVESTIGATORS. A SIMPLE NUMERICAL SCHEME IS DEVELOPED WHICH CAN READILY BE USED TO EVALUATE DIFFERENT ENTRAINMENT & DRAG ASSUMPTIONS.

FIELD INVESTIGATIONS OF MECHANICAL DRAFT COOLING TOWER PLUMES
LAWRENCE D. WINIARSKI AND WALTER F. FRICK
EPA/EPA
03/77, EPA-600/7-77-025,
TETHERED KITOON (SMALL BLIMP) SAMPLING TECHNIQUES WERE DEVISED TO MEASURE THE DISTRIBUTION OF TEMPERATURE AND HUMIDITY IN THE INVISIBLE PORTION OF POWER PLANT COOLING TOWER PLUMES FROM BOTH SINGLE CELL AND MULTIPLE CELL COOLING TOWERS UNDER SEVERAL CONDITIONS. THESE MEASUREMENTS, TOGETHER WITH DATA COLLECTED ON THE AMBIENT METEOROLOGY & EXIT PLUME CONDITIONS, ARE PARTICULARLY USEFUL IN MOIST PLUME MODELING WORK.

TRANSPORT & DISPERSION OF OIL REFINERY WASTES IN THE COASTAL WATERS OF SOUTH WESTERN LAKE MICHIGAN
D. I. MCCOWN, W. HARRISON, AND W. ORVOSH
ANL/ERDA
07/76,

CATEGORY - ENV. TRANSPORT PROCESSES

PUBLICATION

ALTERNATIVES TO CHLORINATION FOR CONTROL OF CONDENSER TUBE BIO-FOULING
H. H. S. TU, G. A. RICHARDSON, AND W. H. HEDLEY
MONSANTO RESEARCH CORPORATION/EPA
03/77, EPA-600/7-77-030,
GIVES RESULTS OF A STUDY OF METHODS USED TO REDUCE FREE-CHLORINE RESIDUALS IN POWER PLANT EFFLUENTS. MOST U.S. POWER PLANTS USE CHLORINE TO CONTROL BIOLOGICAL FOULING IN THEIR COOLING SYSTEMS. THE REPORT CONSIDERS VIABLE ALTERNATIVES TO CURRENT CHLORINATION PRACTICES USED TO DECREASE PASSAGE OF ECOLOGICALLY HARMFUL EFFLUENTS TO RECEIVING WATERS.

ORGANIC CONTAMINANTS IN AQUEOUS COAL CONVERSION EFFLUENTS: ENVIRONMENTAL CONSEQUENCES & RESEARCH PRIORITIES
S. I. HERBES, C. R. SOUTHWORTH, AND C. W. GEHRS
OAK RIDGE NATIONAL LAB/ERDA
00/00,

POTENTIAL TOXICITY AND BIO ACCUMULATION IN AQUATIC SYSTEMS OF TRACE ELEMENTS PRESENT IN COAL CONVERSION COAL CONVERSION
S. G. HILDEBRAND, B. M. CUSHMAN, AND J. A. CARTER
OAK RIDGE NATIONAL LAB/ERDA
00/00,

THE CONTAMINATION OF GROUND WATER BY HEAVY METALS FROM THE LAND DISPOSAL OF FLY ASH
T. L. THEIS AND J. J. MARLEY
UNIVERSITY OF NOTRE DAME/EPA, ERDA
08/76,

NONDESTRUCTIVE ANALYSIS OF BORAN & CADMIM IN ENVIRONMENTAL MATERIALS
E. S. GLADNEY, E. T. JURNEY, AND D. B. CURTIS
LASL/ERDA
00/76,

A SURVEY OF SULFATE, NITRATE, AND ACID AEROSOL EMISSIONS AND THEIR CONTROL
J. F. KIRCHER, A. A. PUTNAM, D. A. BALL, H. H. KRAUSE, J. H. GENCO, R. W. COUTANT, ET. AL.
BATTELLE-COLUMBUS LAB/EPA
04/77, EPA-600/7-77-041,
THE REPORT GIVES RESULTS OF AN EVALUATION OF THE EFFECTS OF FUEL & COMBUSTION MODIFICATIONS ON THE FORMATION OF THE PRIMARY ACID AEROSOLS AND THEIR SIGNIFICANCE AS COMBUSTION-GENERATED POLLUTANTS FROM LARGE STATIONARY SOURCES. INFORMATION GAPS HAVE BEEN IDENTIFIED; FURTHER RESEARCH IS INDICATED.

THE CONTAMINATION OF GROUND WATER BY HEAVY METALS FROM THE LAND DISPOSAL OF FLY ASH
T. L. THEIS, J. J. MARLEY
UNIVERSITY OF NOTRE DAME/ERDA, EPA
02/76,

CATEGORY - ECOLOGICAL EFFECTS

PUBLICATION

PRELIMINARY ASSESSMENT OF THE IMPACT OF TOP SOIL STORAGE & SURFACE-MINING OF COAL ON SOIL MICROBIOTA
E. E. STAFFELDT, B. C. WILLIAMS, R. H. MILLER, AND R. E. CAMERON
ANL/ERDA
04/76,

A DESCRIPTIVE EVALUATION OF THE EFFECTS OF NO. 2 FUEL OIL ON THE TISSUES OF THE SOFT SHELL CLAM
DENNIS M. STAINKEN
EPA/EPA
00/76, EPA-600/3-76-043,
SOFT SHELL CLAMS WERE EXPOSED OVER 28 DAYS AT 4 DEGREES C. TO SINGLE DOSE CONCENTRATIONS OF 10, 50 AND 100 PPM NO. 2 FUEL OIL EMULSION TO SIMULATE A POTENTIAL WINTER OIL SPILL. THE GENERAL EFFECTS OF SUBACUTE OIL EXPOSURE WERE CHARACTERIZED BY A DEPLETION OF GLYCOGEN & A GENERALIZED LEUKOCYTOSIS PARTICULARLY EVIDENT IN THE BLOOD SINUSES OF THE FOOT & MANTLE MEMBRANE.

THE EFFECT OF A NO. 2 FUEL OIL & A SOUTH LOUISIANA CRUDE OIL ON THE BEHAVIOR OF THE SOFT SHELL CLAM
DENNIS M. STAINKEN
EPA/EPA
, EPA-600/3-76-042,
STATIC BIOASSAY TESTS WITH MYA ARENARIA WERE CONDUCTED OVER A 96 HOUR PERIOD TO DETERMINE THE EFFECTS OF A NO. 2 FUEL OIL AND A SOUTH LOUISIANA CRUDE OIL. THE INCREASINGLY GREATER CONCENTRATIONS OF OIL ELICITED GREATER MUCUS SECRETION & DECREASED TACTILE RESPONSE.

EFFECTS OF EXTERNAL APPLICATION OF FUEL OIL ON HATCHABILITY OF MALLARD EGGS
P. H. ALBERS
PATUXENT WILDLIFE RESEARCH CENTER/USFWS
11/76,

THE EFFECTS OF PETROLEUM HYDROCARBONS ON AQUATIC BIRDS
H. I. DIETER
PATUXENT WILDLIFE RESEARCH CENTER/USFWS
08/76,

EFFECTS OF EXTERNAL APPLICATION OF OIL ON COMMON EIDER EGGS
R. C. SEARD AND P. H. ALBERS
PATUXENT WILDLIFE RESEARCH CENTER/USFWS
11/76,

BIOENVIRONMENTAL IMPACT OF A COAL-FIRED POWER PLANT-FIRST INTERIM REPORT, COLSTRIP, MONTANA
R. A. LEWIS, A. S. LOFONN
EPA/EPA
00/76, EPA-600/3-76-002, NTIS-PB 251 162
THE PURPOSE OF THIS PROGRAM IS TO ASSESS THE EFFECTS OF A COAL-FIRED POWER PLANT ON THE TERRESTRIAL ENVIR. NUMEROUS INVESTIGATORS HAVE WORKED TOGETHER ON THIS PROJECT TO ESTABLISH A BASELINE INVESTIGATION TO CHARACTERIZE THE ENVIRONMENT AROUND THE PLANT PRIOR TO OPERATION.

BIOENVIRONMENTAL IMPACT OF A COAL-FIRED POWER PLANT SECOND INTERIM REPORT, COLSTRIP, MONTANA
R. A. LEWIS, N. B. GLASS, AND A. S. LOFONN
EPA/EPA
00/76, EPA-600/3-76-013, NTIS-PB 252 177
THIS DOCUMENT DESCRIBES THE PROGRESS OF AN INVESTIGATION THAT ATTEMPTS TO CHARACTERIZE THE IMPACT OF AIR POLLUTANTS ON A TOTAL ECOSYSTEM. MORE IMPORTANTLY, IT IS THE FIRST ATTEMPT TO GENERATE METHODS TO PREDICT BIOENVIRONMENTAL EFFECTS OF AIR POLLUTION BEFORE DAMAGE IS SUSTAINED. INCLUDED IN THE STUDY ARE THE CHARACTERIZATION OF EFFECTS OF COAL-FIRED POWER PLANT EMISSIONS UPON PLANT & ANIMAL COMMUNITY STRUCTURE.

EFFECTS OF A CONTINOUS LOW LEVEL NO. 2 FUEL DISPERSION ON LABORATORY-HELD INTERTIDAL COLONIES
J. H. VANDERMEUR, R. M. DEAN, L. J. MOORE, P. WILKINSON, C. I. GIBSON, J. W. BLAYCOCK
PNL/ERDA
00/00,

INCIDENCE OF NEASCUS RHINICHTHYS ON LONG NOSE DACE, RELATED TO FISH SIZE AND CAPTURE LOCATION
WILLIAM S. VINIKOUR
ANL/ERDA
00/00,

FISH AND WILDLIFE IMPLICATIONS OF UPPER MISSOURI BASIN WATER ALLOCATION
WILLIAM B. LORD, SUSAN K. TUBBESING, AND CRAIG ALTHEN
UNIVERSITY OF COLORADO/U.S. FISH & WILDLIFE SERVICE
00/75,

SPECIES COMPOSITION & ABUNDANCE OF BENTHIC MACROINVERTEBRATES IN RELATION TO WATER QUALITY IN TONGUE RIVER
WILLIAM S. VINIKOUR
ANL/ERDA
00/00,

SOME EFFECTS OF TOP SOIL STORAGE DURING SURFACE MINING ON THE SOIL MICROBIOTA
R. H. MILLER AND R. E. CAMERON
ANL/ERDA
10/76,

CATEGORY - ECOLOGICAL EFFECTS

PUBLICATION

ALGAE AND PROTOZOA OF COAL MINE SOILS AND SPOILS
E. N. MILLER AND R. E. CAMERON
ANL/ERDA
03/76,

EFFECTS OF COAL STRIP MINING ON STREAM WATER QUALITY: PRELIMINARY RESULTS
E. H. DETTMAN, R. D. OLSEN, AND WILLIAM S. VINIKOAR
ANL/ERDA
00/00,

ASSESSMENT OF AQUATIC IMPACTS OF WESTERN COAL MINING: SOME INTEGRATIVE APPROACHES
E. H. DETTMANN AND R. D. OLSEN
ANL/ERDA
00/00,

TRACE METALS IN SURFACE WATERS, FISH, AND BENTHOS IN THE VICINITY OF A COAL STRIP MINE IN N.C. WYOMING
WILLIAM S. VINIKOAR AND RICHARD D. OLSEN
ANL/ERDA
00/00,

WESTERN ENERGY/ENVIRONMENT MONITORING ATLAS
REMOTE SENSING DIVISION AND MONITORING OPERATIONS DIVISION
EPA/EPA
05/77, EPA-600/7-77-047A,
THE WESTERN ENERGY 'ATLAS' WILL GIVE POLICY MAKERS AT VARIOUS LEVELS A REGIONAL PERSPECTIVE OF THE IMPACTS ON MEDIA QUALITY (AIR, LAND, & WATER) (LEVEL & EXTENT) RESULTING FROM THE PATTERN OF ENERGY DEDICATED LAND USE. THE PURPOSE OF THE 'ATLAS' IS TO SYNTHESIZE MONITORING INFORMATION INTO AN INTEGRATED FORMAT WHEREIN BOTH THE GEOGRAPHICAL AND GEOGRAPHICAL CAN BE DISPLAYED.

FIELD RELIABILITY OF THE ORSAT ANALYZER
WILLIAM J. MITCHELL AND H. RODNEY HIDGETT
EPA/EPA
00/76, EPA-600/J-76-048,
RESULTS FROM 4 FIELD BASED COLLABORATIVE TESTS & FROM 1 LAB BASED ON COLLABOTATIVE TEST OF THE ORSAT ANALYTICAL PROCEDURE ARE DISCUSSED. WAYS TO IMPROVE THE ORSAT APPARATUS & INCREASE THE RELIABILITY OF THE DATA ARE SUGGESTED. ALSO REPORTED ARE THE RESULTS FROM FIELD & LAB STUDIES ON THE RELIABILITY OF USING INDIVIDUAL CARBON DIOXIDE & OXYGEN ANALYZERS OF THE FYRITE TYPE TO DETERMINE STACK GAS MOLECULAR WEIGHT.

CATEGORY – CHARAC., MEASUREMENT, AND MONITORING

PUBLICATION

PROGRAMMABLE POCKET CALCULATOR APPLIED TO AIR POLLUTION MEASUREMENT STUDIES: STATIONARY SOURCES
J. W. RAGLAND, E. H. CUSHING, J. D. MCCAIN, AND W. B. SMITH
SOUTHERN RESEARCH INSTITUTE/EPA
00/76, EPA-600/6-76-002,

DEVELOPMENT OF A METHODOLOGY FOR DESIGNING CARBON MONOXIDE MONITORING NETWORKS
M. K. LIU, J. MEYER, R. POLLOCK, P. M. ROTH, J. H. SEINFELD, ET. AL.
SYSTEMS APPLICATIONS, INC./EPA
03/77, EPA-600/4-77-019,
A METHODOLOGY IS PRESENTED FOR DESIGNING A CARBON MONOXIDE NETWORK BASED ON THE OBJECTIVE OF IDENTIFYING CONCENTRATIONS THAT EXCEED THE NATIONAL AMBIENT AIR QUALITY STANDARDS. THE ESTABLISHMENT OF A FIELD MEASUREMENT PROGRAM IS DESCRIBED WHICH WOULD PROVIDE AIR QUALITY & METEOROLOGICAL DATA FOR MODEL VALID. & SIMULATION AS REQUIRED IN DEV. OF THE SPECS. FOR THE NUMBER & LOCATION OF SITES IN THE NETWORK DESIGN.

DEVELOPMENT & TRIAL FIELD APPLICATION OF A QUALITY ASSURANCE PROGRAM FOR DEMONSTRATION PROJECTS
J. BUCHANAN
RESEARCH TRIANGLE INSTITUTE/EPA
00/76, EPA-600/2-76-083, NTIS-PB 253 944
THE REPORT OUTLINES RESULTS OF A PROJECT: TO DEVELOP A SET OF QUALITY ASSURANCE GUIDELINES FOR EPA DEMO PROJECTS; TO IMPLEMENT A SHORT-TERM QUALITY ASSURANCE PROGRAM AT THE EPA WET LIMESTONE SCRUBBER FACILITY AT THE SHAWNEE STEAM/ELECTRIC PLANT; & TO MODIFY THE GUIDELINES IN LIGHT OF THE SHAWNEE OPERATING EXPERIENCE.

EVALUATION OF CONTINUOUS MONITORS FOR CARBON MONOXIDE IN STATIONARY SOURCES
MARK REFF
SCOTT ENVIRONMENTAL TECHNOLOGY, INC./EPA
03/77, EPA-600/2-77-063,
THE PERFORMANCE CHARACTERISTICS OF FIVE COMMERCIALLY AVAILABLE CONTINUOUS CARBON MONOXIDE MONITORS WERE EVALUATED IN A TWO PART PROGRAM CONSISTING OF LABORATORY & FIELD PHASES. DATA GENERATED IN BOTH PHASES WERE USED AS THE BASIS FOR RECOMMENDING MINIMUM PERFORMANCE SPECIFICATIONS FOR CONTINUOUS CARBON MONOXIDE MONITORS AT PETROLEUM REFINERIES.

GUIDELINES FOR DEMONSTRATION PROJECT QUALITY ASSURANCE PROGRAMS
J. BUCHANAN
RESEARCH TRIANGLE INSTITUTE/EPA
00/76, EPA-600/2-76-081, NTIS-PB 252 257
THE REPORT PRESENTS GENERAL GUIDELINES FOR PLANNING & IMPLEMENTING QUALITY ASSURANCE PROGRAMS AT EPA/IERL-RTP DEMONSTRATION PROJECTS. A DETAILED CHECKLIST IS PROVIDED TO AID IN THE SYSTEM REVIEW, & 3 TABLES PROVIDE GENERAL INFORMATION ON AVAILABLE TECHNIQUES FOR THE PERFORMANCE AUDIT. THE REPORT IS DESIGNED FOR PROJECT OFFICERS, CONTRACTORS, & OTHERS CONCERNED WITH QUALITY ASSURANCE AT IERL-RTP DEMO PROJ.

SELECTION AND EVALUATION OF SORBENT RESINS FOR THE COLLECITON OF ORGANIC COMPOUNDS
J. ADAMS, J. KING, AND P. LEVINS
ARTHUR D. LITTLE, INC./EPA
04/77, EPA-600/7-77-044,
THE REPORT GIVES RESULTS OF AN EXPERIMENTAL PROGRAM TO CHARACTERIZE THE BEHAVIOR OF RESINS WHICH CAN BE USED IN THE SORBENT TRAP MODULE OF A SAMPLING TRAIN USED FOR ENVIRONMENTAL ASSESSMENT STUDIES. BOTH XAD-2 AND TENAX-GC RESINS WERE STUDIED. THE STUDIES SHOWED THAT XAD-2 HAS A GREATER VOLUMETRIC & WEIGHT CAPACITY THAN TENAX-GC AND IS, THEREFORE, PREFERRED FOR USE IN THE SASS TRAIN SORBENT CANISTER.

IERL-RTP PROCEDURES MANUAL: LEVEL 1 TENTATIVE ENVIRONMENTAL ASSESSMENT BIOLOGICAL TESIS
B. E. DAVIS, A. J. DENNIS, AND H. H. DUKE
BATTELLE-COLUMBUS LAB/EPA
04/77, EPA-600/7-77-043,
THE MANUAL GIVES LEVEL 1 BIOLOGICAL TESTING PROCEDURES FOR PERSONNEL EXPERIENCED IN CONDUCTING BIOASSAYS ON SAMPLES FROM INDUSTRIAL & ENERGY PRODUCING PROCESSES. LEVEL 1 IS A SCREENING PHASE THAT CHARACTERIZES THE POLLUTANT POTENTIAL OF PROCESS INFLUENT & EFFLUENT STREAMS. THE MANUAL IS A COMPANION TO 'IERL-RTP PROCEDURES MANUAL: LEVEL 1 ENVIRONMENTAL ASSESSMENT,' EPA-600/2-76-160A, JUNE 1976.

SULFATES IN THE ATMOSPHERE–A PROGRESS REPORT ON PROJECT MISTT
W. E. WILSON, R. J. CHARLSON, F. B. HUSAR, K. T. WHITBY, AND L. BLUMENTHAL
EPA/EPA
03/77, EPA-600/7-77-021,
THE SIZE AND SULFATE CONTENT OF ATMOSPHERIC AEROSOLS AND THE RATE AND MECHANISMS FOR SULFATE FORMATION FROM SULFUR DIOXIDE IN POWER PLANT PLUMES ARE REVIEWED. EMPHASIS IS PLACED ON RECENT EPA STUDIES (PROJECT MISTT).

TRACE ANALYSIS OF ARSENIC BY COLORIMETRY, ATOMIC ABSORPTION AND POLAROGRAPHY
LYMAN H. HOWE
TENNESSEE VALLEY AUTHORITY/EPA
04/77, EPA-600/7-77-036,
A DIFFERENTIAL PULSE POLAROGRAPHIC METHOD WAS DEVELOPED FOR DETERMINING TOTAL ARSENIC CONCENTRATIONS IN WATER SAMPLES FROM ASH PONDS AT STEAM-ELECTRIC GENERATING PLANTS. THE 3 METHODS COMPARED FAVORABLY FOR SPLIT SAMPLES; HOWEVER, RESULTS OF THE COLORIMETRIC METHOD FOR THE REPLICATE ANALYSES WERE SLIGHTLY NEGATIVELY BIASED.

NH3 PRECONCENTRATOR/INTEGRATOR INSTRUCTION MANUAL
L. BRUBESH, V. BARTON, AND C. MORRIS
LLL/ERDA
06/73,

CATEGORY - CHARAC., MEASUREMENT, AND MONITORING

PUBLICATION

DEVELOPMENT OF PROCEDURES FOR THE MEASUREMENT OF FUGITIVE EMISSIONS
P. W. KALIKA, R. E. KIRSON, AND P. T. BARTLETT
RESEARCH CORPORATION OF NEW ENGLAND/EPA
12/76, EPA-600/2-76-284,
DISCRIBES THE DEVELOPMENT OF BASIC PROCEDURES THAT CAN BE USED TO SAMPLE & ANALYZE FUGITIVE EMISSIONS FROM INDUSTRIAL PROCESSES. 18 INDUSTRIES/PROCESSES WERE IDENTIFIED, BASED ON THEIR POTENTIAL TO BE HAZARDOUS AND TO HAVE HIGH FUGITIVE EMISSION RATES.

WESTERN ENERGY/ENVIRONMENT MONITORING STUDY: PLANNING AND COORDINATION SUMMARY
GREGORY J. D'ALESSIO
EPA/EPA
03/77, EPA-600/7-77-024,
THIS REPORT IS A SUMMARY OF THE PLANNING, COORDINATION AND IMPLEMENTATION MECHANISMS WHICH PROVIDE THE FRAMEWORK FOR THE WESTERN ENERGY/ENVIRONMENT MONITORING STUDY. THIS STUDY INVOLVES PARTICIPATION BY ELEMENTS OF EPA, NASA, NOAA, AND USGS.

ANALYTICAL VARIABILITY OF FIVE WASTEWATER PARAMETERS-PETROLEUM REFINING INDUSTRY
LEON H. MYERS, THOMAS E. SHORT, JR., BILLY L. DEPRATER, AND FRED H. PFEFFER
ROBERT S. KERR ENVIRONMENTAL RESEARCH LAB/EPA
09/76, EPA-600/2-76-238,
SAMPLES WERE DIVIDED AMONG 12 LABORATORIES TO BE ANALYZED FOR CHEMICAL OXYGEN DEMAND, SUSPENDED SOLIDS AND OTHER POLLUTANTS. THE ROBERT S. KERR ENL ANALYZED 6 SETS TO DETERMINE INTRALABORATORY DEVIATION, WHILE THE OTHER LABS ANALYZED SINGLE SAMPLES TO PROVIDE INTERLABORATORY DEVIATION DETERMINATIONS. STUDY RESULTS EXPRESSED IN TERMS OF AVGS., STAND. DEV., AND SPIKE RECOVERIES FOR LAB EVALUATIONS.

COMPARISON OF WET CHEMICAL AND INSTRUMENTAL METHODS FOR MEASURING AIRBORNE SULFATE-INTERIM REPORT
B. R. APPEL, E. I. KOTHNY, E. M. HOFFER, AND J. J. WESOLOWSKI
CALIFORNIA DEPT. OF HEALTH/EPA
00/76, EPA-600/2-76-059,
FOUR TECHNIQUES FOR DETERMINATION OF WATER SOLUBLE SULFATE IN ATMOSPHERIC SAMPLES WERE COMPARED INCL. THE BARIUM SULFATE TURBIDIMETRIC METHOD, THE BARIUM-THORIN METHOD, THE AUTOMATED BARIUM-METHYLTHYMOL BLUE PROCEDURE, & A MICROCHEMICAL COLORIMETRIC METHOD. THESE, IN TURN, WERE COMPARED TO X-RAY FLUORESCENCE FOR DETERMINATION OF TOT. SULFUR, OBTAINED INDEPENDENTLY AT EPA'S RESEARCH TRIANGLE PARK LAB.

VOLTAMMETRIC DETERMINATION OF ACROLEIN
L. H. LYBAN
TENNESSEE VALLEY AUTHORITY/EPA
00/76, EPA-600/7-76-005, NTIS-PB 260 376

REMOTE MEASUREMENTS OF POLLUTANTS FROM STATIONARY SOURCES USING RAMAN LIDAR
S. K. POULINEY, H. L. BRUMFIELD, J. S. SIVITAR
NASA/EPA
00/00,

INTERLABORATORY INTERCOMPARISON OF POLONIUM-210 MEASUREMENTS
L. H. ZIEGLER
EPA/EPA
00/76, EPA-600/4-76-054, NTIS-PB 262 392
IN 1975, THE EPA DISTRIBUTED CALIBRATED SOLUTIONS OF POLONIUM-210 TO LABS INTERESTED IN PARTICIPATING IN AN INTERCOMPARISON STUDY OF POLONIUM-210 ANALYSIS. THE RESULTS REPORTED BY ALL THE LABS ARE GIVEN. FIFTY-FOUR PERCENT OF THE REPORTED ACTIVITY VALUES WERE WITHIN + OR - 10% OF THE ACTIVITY VALUE CERTIFIED BY THE NATIONAL BUREAU OF STANDARDS.

EXPERIMENTAL/ANALYTICAL INVESTIGATION OF DEEP SUBMERGED MULTIPLE BUOYANT JETS
I. O. KANNBERG AND L. R. DAVIS
OREGON STATE UNIVERSITY/EPA
00/76, EPA-600/3-76-101, NTIS-PB 261 313
THE RESULTS OF AN EXPERIMENTAL & ANALYTICAL STUDY OF DEEP SUBMERGED MULTIPLE PORT THERMAL DISCHARGES ARE PRESENTED. THE EXPERIMENTAL RESULTS INCLUDE THE MEASURED DOWNSTREAM THERMAL DILUTION, WIDTH, & CENTERLINE TRAJECTORY OF THE BUOYANT THERMAL PLUME FROM MULTIPLE PORT DISCHARGES CONSISTING OF A ROW OF EQUALLY SPACED DISCHARGE PORTS.

ASSESSMENT OF THE METEROLOGICAL STATIONS ALONG THE STRAIT OF JUAN DE FUCA
(INDIVIDUAL AUTHORS NOT IDENTIFIED)
NOAA/ERDA
05/76,

SIMULTANEOUS DETERMINATION OF SILICA & PHOSPHATE IN WATER FROM A SINGLE EXPERIMENT USING A CENTRIFUGE
W. D. BOSTICK, C. A. BURTIS, AND C. D. SCOTT
OAK RIDGE NATIONAL LAB/ERDA
00/00,

ENZYMATIC DETERMINATION OF AMMONIA WITH A MINATURE CENTRIFUGAL FAST ANALYZER
W. D. BOSTICK, H. C. LOVELACE, AND C. A. BURTIS
OAK RIDGE NATIONAL LAB/ERDA
00/00,

PUBLICATION

DETERMINATION OF URANIUM IN NATURAL WATERS BY NEUTRON ACTIVATION ANALYZER
E. S. GLADNEY, J. W. OWENS, AND J. W. STARNER
LASL/ERDA
00/00,

EXCHANGE OF COMMENTS: LOSS OF MERCURY DURING FLAMELESS ATOMIC ABSORBTION SPECTROMETRY
(AUTHORS NOT IDENTIFIED)
LASL/ERDA
00/00,

LITHIUM METABORATE FUSION & THE DETERMINATION OF TRACE METALS IN FLY ASH BY FLAMBLE'S ATOMIC ABSORBTION
J. W. OWENS AND E. S. GLADNEY
LASL/ERDA
00/00,

IERL-RTP DATA QUALITY MANUAL
F. SMITH AND J. BUCHANAN
RESEARCH TRIANGLE INSTITUTE/EPA
00/76, EPA-600/2-76-159, NTIS-PB 256 697
THE MANUAL GIVES GUIDELINES FOR THE ESTABLISHMENT & MAINTENANCE OF AN INTEGRATED DATA QUALITY PROGRAM FOR EPA'S IERL-RTP. ADMINISTRATIVE SYSTEMS DEDICATED TO THE DATA QUALITY PROGRAM ARE DELINEATED. THESE SYSTEMS INCLUDE QUALITY POLICIES & OBJECTIVES, ORGANIZATIONAL STRUCTURE & KEY QUALITY PERSONNEL, & A SCHEDULE FOR IMPLEMENTATION.

SEPERATION & ANALYSIS OF REFRACTORY POLLUTANTS IN WATER BY HIGH-RESOLUTION LIQUID CHROMATOGRAPHY
W. W. PITT, JR., R. L. JOLLEY, AND S. KATZ
OAK RIDGE NATIONAL LAB/ERDA
00/00,

USING COLOR TV SIMULTANEOUSLY TO DISPLAY X-RAY MAPS OF THREE ELEMENTS
J. B. PAWLEY AND T. L. HAYES
UNIVERSITY OF CALIFORNIA, BERKELEY/ERDA, NIH
04/76,

SIMULTANEOUS THREE ELEMENT X-RAY MAPPING USING COLOR TV
J. B. PAWLEY, T. HAYES, AND E. H. FALK
UNIVERSITY OF CALIFORNIA/ERDA
04/76,

DETERMINING EMISSIONS MEASUREMENTS NEEDS FOR AN EMERGING INDUSTRY-ADVANCED FOSSIL FUELS UTILIZATION
M. E. GUERIN AND J. L. EPLER
OAK RIDGE NATIONAL LAB/ERDA
06/76,

RAPID ELEMENTAL CHARACTERIZATION OF COAL COMBUSTION BY-PRODUCTS USING SIMULTANEOUS 3 COLOR X-RAY MAPPING
JAMES B. PAWLEY AND GERALD L. FISHER
UNIVERSITY OF CALIFORNIA/ERDA
04/76,

PROCEEDINGS, SECOND CONFERENCE ON ENVIRONMENTAL QUALITY SENSORS
PROCEEDINGS
EPA/EPA
12/76, EPA-600/9-76-031,
THE PAPERS COVERED SUCH TOPICS AS: AIRCRAFT-, SATELLITE-, AND LAND-BASED REMOTE SENSING SYSTEMS FOR MONITORING AND/OR IDENTIFING POLLUTANTS IN THE AIR, IN WATER, AND ON LAND; IN SITU MONITORING SYSTEMS, REMOTE SENSING TECHNIQUES FOR LAND USE MAPPING, ENVIRONMENTAL IMPACT ASSESSMENT, WATER SURFACE TEMPERATURE DETERMIN. OIL & HAZARDOUS MATERIAL SPILLS IDENTIFICATION; ALSO PRESENT ENV. MONITORING REQ. OF EPA REGIONS.

MONITORING ENVIRONMENTAL IMPACTS OF THE COAL AND OIL SHALE INDUSTRIES -- R&D NEEDS
D. C. JONES, W. S. CLARK, W. F. HOLLAND, J. C. LACY, E. D. SETHNESS
RADIAN CORPORATION/EPA
02/77, EPA-600/7-77-015,
RECOMMENDATIONS ARE PRESENTED FOR MONITORING AND PREDICTIVE TECHNOLOGY FOR THE COAL CONVERSION AND OIL SHALE INDUSTRIES. THE RECOMMENDATIONS ARE BASED UPON A LITERATURE SURVEY OF THE EMISSIONS AND POTENTIAL IMPACTS OF THESE INDUSTRIES. DESCRIPTIONS OF THE TECHNOLOGIES ARE INCLUDED.

ALARM-LEVEL MONITOR FOR SO2 EMISSIONS FROM STATIONARY SOURCES
DONALD A. WALLACE AND WAYNE PERKINS
INTERNATIONAL BIOPHYSICS CORPORATION/EPA
02/77, EPA-600/2-77-021,
THE MONITOR WAS DESIGNED TO BE INEXPENSIVE, SIMPLE TO OPERATE, AND EASILY MAINTAINED. THE GAS SAMPLE FLOWS THROUGH AN ANALYZER THAT CONTAINS AN ELECTROCHEMICAL CELL AS THE SENSING ELEMENT. THE ANALYZER HAS THE SENSITIVITY TO DETECT SO2 CONCENTRATIONS IN A SINGLE RANGE FROM 0 TO 1000 PARTS PER MILLION. VISUAL AND AUDIBLE ALARMS ARE ACTIVATED WHEN SO2 AND EMISSIONS ARE IN EXCESS OF A PRESET LEVEL.

CATEGORY - CHARAC., MEASUREMENT, AND MONITORING

PUBLICATION

EVALUATION OF STATIONARY SOURCE PARTICULATE MEASUREMENT METHODS — VOL. II OIL-FIRED STEAM GENERATORS
EDWARD T. PETERS AND JEFFREY W. ADAMS
ARTHUR D. LITTLE, INC./EPA
02/77, EPA-600/2-77-026,
THE STUDY WAS CONCERNED WITH DETERMINING WHETHER ANY 'FALSE' PARTICULATES RESULTED FROM THE COLLECTION PROCESS OR FROM COLLECTED PARTICULATE, TWO SERIES OF FIELD TESTS WERE CONDUCTED. IN BOTH CASES SIMULTANEOUS SAMPLES WERE COLLECTED WITH 2 TRAINS. RUNS WERE PERFORMED IN WHICH ONE OR BOTH SAMPLES WERE SPIKED WITH SO2 TO APPROX. HIGH SULFUR FUEL. COMPARISON OF DATA SHOWED NO FORMATION OF FALSE PARTICULATE.

DEVELOPMENT OF A PORTABLE DEVICE TO COLLECT SULFURIC ACID AEROSOL--INTERIM REPORT
WILLIAM J. BARRETT, HERBERT C. MILLER, JOSIAH E. SMITH,JR., AND CHRISTINA H. GWIN
SOUTHERN RESEARCH INSTITUTE/EPA
02/77, EPA-600/2-77-027, NTIS-PB 264 257
DESCRIBES THE EFFECTS OF POSSIBLE ATMOSPHERIC INTERFERENCES ON THE QUANTITATIVE COLLECTION OF SULFURIC ACID AEROSOL IN A FILTER. THE TEFLON FILTERS WERE EXPOSED TO POTENTIAL GAS, VAPOR, AND PARTICULATE INTERFERENCES. AMMONIA, PARTICULATE CALCIUM CARBONATE, AND AMBIENT PARTICULATE MATERIAL CAUSED SEVERE LOSSES OF SULFURIC ACID. 602 AND NO2 HAD NO EFFECT. OTHER RESULTS ARE DISCUSSED IN THE TEXT.

WESTERN ENERGY/ENVIRONMENT MONITORING ATLAS: OVERHEAD MONITORING APPENDIX
REMOTE SENSING DIVISION
EPA/EPA
04/77, EPA-600/7-77-047B,
THE PURPOSE OF THE OVERHEAD MONITORING APPENDIX IS TO DEMONSTRATE CURRENT REMOTE SENSING TECHNIQUES UTILIZED IN MONITORING MINING ACTIVITIES & RECLAMATION EFFORTS ON SURFACE-MINED AREAS LOCATED IN THE WESTERN PART OF THE UNITED STATES.

METHODOLOGY FOR MEASUREMENT OF POLYCHLORINATED BIPHENYLS IN AMBIENT AIR & STATIONARY SOURCES-A REVIEW
JOHN H. MARGESON
EPA/EPA
04/77, EPA-600/4-77-021,
THE STATE OF DEVELOPMENT OF A METHODOLOGY FOR MEASUREMENT OF POLYCHLORINATED BIPHENYLS (PCBS) IN AMBIENT AIR & STATIONARY SOURCES WAS REVIEWED. THE MOST PROMISING METHOD FOR AMBIENT AIR MEASUREMENTS INVOLVES COLLECTION OF PCBS ON POLYURETHANE FOAM, EXTRACTION WITH AN ORGANIC SOLVENT, REMOVAL OF INTERFERENCES BY COLUMN CHROMATOGRAPHY, AND CONFIRMATION & ANALYSIS BY ELECTRON-CAPTURE GAS CHROMATOGRAPHY.

SURVEY OF CONTINUOUS SOURCE EMISSION MONITORS: SURVEY NO. 1 - NOX AND SO2
MICHAEL C. OSBORNE AND RODNEY MIDGETT
EPA/EPA
04/77, EPA-600/4-77-022,
THE QUALITY ASSURANCE BRANCH OF THE EMSL HAS UNDERTAKEN THE TASK OF EVALUATING THE ACCURACY & RELIABILITY OF CONTINUOUS MONITORS WHICH HAVE BEEN ON-LINE FOR 6-MONTHS OR LONGER. RESULTS FROM THIS STUDY REVEALED THAT LESS THAN HALF OF THE MONITORS FAILED TO ACHIEVE A PERFORMANCE ACCURACY OF +10%. IN GENERAL, THE SO2 MONITORS AND THE NOX MONITORS PERFORMED EQUALLY WELL.

CATEGORY - HEALTH EFFECTS

PUBLICATION

DETECTION OF EARLY CHANGES IN LUNG CELL CYTOLOGY BY FLOW-SYSTEMS ANALYSIS
J. A. STEINKAMP, M. INGRAM, K. M. HANSEN, AND J. S. WILSON
LASL/ERDA
12/75,

THERAPY OF METAL POISONING
ARTHUR LINDENBAUM
ANL/ERDA
00/75,

HEALTH IMPACTS OF ENVIRONMENTAL POLLUTION IN ENERGY DEVELOPMENT IMPACTED COMMUNITIES: VOL. II APPENDICES
M. L. HAMMER
COPELY INTERNATIONAL CORP./EPA
09/76,

HEALTH IMPACTS OF ENVIRONMENTAL POLLUTION IN ENERGY DEVELOPMENT IMPACTED COMMUNITIES: VOL. I ENERGY SOURCES
M. L. HAMMER
COPEL. INTERNATIONAL CORP./EPA
09/76,

DETECTION OF EARLY CHANGES IN LUNG CELL CYTOLOGY BY FLOW-SYSTEMS ANALYSIS
J. A. STEINKAMP, K. M. HANSEN, J. S. WILSON, AND G. C. SALTZMAN
LASL/ERDA
06/76,

A SOLID SUBSTRATE IMMUNOLOGICAL ASSAY FOR MONITORING ORGANIC ENVIRONMENTAL CONTAMINANTS
HERBERT E. LUKENS AND COLIN B. WILLIAMS
IRT CORPORATION/EPA
03/77, EPA-600/1-77-018,

PHYSICAL CHARACTER OF TOXIC METAL COMPOUNDS AS RELATED TO TISSUE DISTRIBUTION, TOXICITY, & THERAPEUTIC REMOVAL
A. LINDENBAUM, D. E. BAXTER, AND M. G. DOAN
ANL/ERDA
00/75,

EFFECTS OF AGENTS ASSOCIATED WITH COAL & OIL SHALE EXTRACTION, CONVERSION, UTILIZATION ON CELL-CYCLE KINETICS
R. A. TOBEY AND C. E. HILDEBRAND
LASL/ERDA
12/75,

SUBRIBOSOMAL PARTICLES OF CULTURED CHINESE HAMSTER CELLS, IDENTIFICATION OF RING-SHAPED STRUCTURES
M. D. ENGER AND R. T. OKINAKA
LASL/ERDA
00/76,

EFFECTS OF IONIZING RADIATION ON RNA METABOLISM IN CULTURED MAMMALIAN CELLS
M. D. ENGER, E. W. CAMPBELL, R. A. WALTERS, H. A. CRISSMAN, J. A. STEINKAMP
LASL/ERDA
00/76,

EFFECTS OF CADMIUM ON KARYOTYPE STABILITY IN CHINESE HAMSTER OVARY CELL
L. L. DEAVEN AND E. W. CAMPBELL
LASL/ERDA
06/76,

EFFECTS OF ENVIRONMENTAL CARCINOGENS ON DEVELOPMENT OF THE IMMUNE RESPONSE.
BERNARD N. JAROSLOW AND SUZANNE S. DORNFIELD
ANL/ERDA
00/75,

CELL-CYCLE-RELATED BIOSYNTHESIS
R. A. TOBEY AND C. E. HILDEBRAND
LASL/ERDA
03/76,

ANALYSIS OF EFFECTS OF CHEMOTHERAPEUTIC AGENTS ON CELL GROWTH KINETICS IN CULTURED CELLS
R. A. TOBEY AND C. E. HILDEBRAND
LASL/ERDA
00/76,

EVALUATION OF MECHANISMS OF ENERGY-RELATED TOXIC AGENTS ON THE MAMALIAN HEMATOPOETIC SYSTEM
J. A. STEINKAMP, M. INGRAM, AND Z. V. SVITRA
LASL/ERDA
12/75,

INFLUENCE OF DIET ON THE GASTROINTESTINAL ABSORPTION OF CADMIUM
H. E. WALBURG, R. J. CHERTOK, L. B. SASSER
COMPARITIVE ANIMAL RESEARCH LAB/ERDA
11/76,

CATEGORY - HEALTH EFFECTS

PUBLICATION

FACTORS ASSOCIATED WITH THE INCIDENCE OF COGENITAL ANOMALIES: A LOCALIZED INVESTIGATION
JOHN A. BURDESHAW AND SHELDON SCHAFFER
SOUTHERN RESEARCH INSTITUTE/EPA
03/77, EPA-600/1-77-016,

CYTOTOXIC EFFECT OF TRACE METALS ADSORBED ONTO FLY ASH PARTICLES
CATHERINE ARANYI
IIT RESEARCH INSTITUTE/EPA
03/77, EPA-600/1-77-017,
FLY ASH PARTICLES FRACTIONED INTO 3 SIZE RANGES WERE COATED WITH LEAD, NICKEL AND MANGANESE OXIDES TO DETERMINE THE EFFECTS OF PARTICLE SIZE & SURFACE AREA ON THE IN VITRO TOXICITY OF THESE METALS FOR ALVEOLAR MACROPHAGES. THE GREATER TOXICITY OF THE SMALL PARTICLES APPEARED TO BE DUE TO SURFACE INTERACTION BETWEEN PARTICLES & THE ALVEOLAR MACROPHAGES. THUS, THE TOXIC EFFECT IS SURFACE-AREA AS WELL AS DOSE RELATED.

BACTERIOPHAGE SYSTEM FOR SCREENING AND STUDY OF BIOLOGICALLY ACTIVE POLYCYCLIC AROMATIC HYDROCARBONS
WEN-TAH HSU, RONALD G. HARVEY, EDWARD J. S. LIN, AND SAMUEL B. WEISS
COMPARITIVE ANIMAL RESEARCH LAB/ERDA
11/76,

KARYOTYPE ANALYSIS OF CHINESE HAMSTER CHROMOSOMES BY FLOW MICROFLUOROMETRY
L. L. DEAVEN, E. STUBBLEFIELD, AND J. H. JETT
LASL/ERDA
11/75,

DETECTION OF EARLY CHANGES IN LUNG CELL CYTOLOGY BY FLOW-SYSTEMS ANALYSIS
J. A. STEINKAMP, K. M. HANSEN, J. S. WILSON, AND G. C. SALTZMAN
LASL/ERDA
09/76,

A TOTALLY AUTOMATIC CRITICAL POINT DRYER
JAMES B. PAWLEY AND GERALD L. FISHER
UNIVERSITY OF CALIFORNIA/ERDA
04/76,

VISUALIZATION OF FLY ASH IN PARTICLES IN PULMONARY MACROPHAGES USING COLOR X-RAY MAPPING
JAMES B. PAWLEY AND GERALD L. FISHER
UNIVERSITY OF CALIFORNIA/ERDA
04/76,

EFFECTS OF CHEMICAL TOXICANS ASSOCIATED WITH PRODUCTION & CONSUMPTION OF FUEL ON PHAGCYTIC CELLS
JOHN L. SKOSEY
/EPA
00/76,

EVALUATION OF MECHANISMS OF ENERGY-RELATED TOXIC AGENTS ON THE MAMALIAN HEMATOPOETIC SYSTEM
J. A. STEINKAMP, P. H. LABAUVE, Z. V. SVITRA, AND M. INGRAM
LASL/ERDA
09/76,

IONIZING AND NONIONIZING RADIATION DAMAGE: INTERACTION IN CHINESE HAMSTER CELLS
M. M. ELKIND AND A. HAN
ANL/ERDA
05/76,

ALTERED GROWTH AND RNA METABOLISM IN CULTURED CHINESE HAMSTER OVARY CELLS EXPOSED TO LOW LEVELS OF CADMIUM
M. D. ENGER, C. R. HILDEBRAND, AND A. G. SAPONARA
LASL/ERDA
06/76,

A BACTERIOPHAGE FOR SCREENING OF CARCINOGENIC POLYCYCLIC AROMATIC HYDROCARBONS
SAMUEL B. WEISS
ERDA/EPA
11/76,

SELECTION OF A MODEL SYSTEM TO DETERMINE EFFECTS OF ENERGY PRODUCTION BY-PRODUCTS ON IMMUNE SYSTEM
D. R. SMITH
LASL/ERDA
09/76,

SELECTION OF A MODEL SYSTEM TO DETERMINE EFFECTS OF ENERGY PRODUCTION BY-PRODUCTS ON IMMUNE SYSTEM
D. R. SMITH AND R. L. GROSS
LASL/ERDA
12/75,

VALIDATION OF THE IN VIVO SOMATIC MUTATION METHOD IN THE MOUSE AS A PRESCREEN FOR GERMINAL POINT MUTATIONS
L. B. RUSSELL
OAK RIDGE NATIONAL LAB/ERDA
00/00,

CATEGORY - HEALTH EFFECTS

PUBLICATION

RAPID SCREENING FOR CHEMICAL CARCINOGENS:TRANSFORMING ACTIVITY OF SELECTED NITROSO COMPOUNDS
J. H. QUARLES, E. W. SIGA, C. K. SCHMELZ, E. W. TENNANT
OAK RIDGE NATIONAL LAB/ERDA
00/00,

FRACTIONATION OF SYSTHETIC CRUDE OILS FROM COAL FOR BIOLOGICAL TESTING
I. B. RUBIN, H. R. GUERIN, A. A. HARDIGREE, AND J. L. EPLER
OAK RIDGE NATIONAL LAB/ERDA
00/00,

ESTIMATION OF PERMISSIBLE CONCENTRATIONS OF POLLUTANTS FOR CONTINUOUS EXPOSURE
B. HANDY AND A. SCHINDLER
RESEARCH TRIANGLE INSTITUTE/EPA
00/76, EPA-600/2-76-155, NTIS-PB 253 959
GIVES RESULTS OF A STUDY AIMED AT: ESTIMATING THE MAXIMUM PERMISSIBLE CONTINUOUS EXPOSURE TO WHICH INDIVIDUALS MAY BE SUBJECTED; & COMPUTING PERMISSIBLE EXPOSURE TO A MULTIPOLLUTANT SYSTEM SO THAT THE DEGREE OF CONTROL NECESSARY FOR A WASTE STREAM CAN BE COMPUTED.

COMPARITIVE MUTAGENESIS OF QUINOLINES
J. L. EPLER, W. WINTON, T. HO, F. W. LABINER, T. K. RAO, AND A. A. HARDIGREE
OAK RIDGE NATIONAL LAB/ERDA
00/00,

ENVIRONMENTAL MUTAGENESIS OF ENERGY-RELATED COMPOUNDS
J. I. EPLER, W. WINTON, C. G. HEAD, T. HO, AND A. A. HARDIGREE
OAK RIDGE NATIONAL LAB/ERDA
00/00,

GROWTH AND MAINTENANCE OF TRACHEAL EPITHELIAL CELLS IN PRIMARY CULTURE
A. MARCHOK, J. C. RHOTON, H. A. GRIESEMER, AND P. METTES HEIM
OAK RIDGE NATIONAL LAB/ERDA
00/00,

DIFFERENCES IN BENZO (A) PYRENE METABOLISM BETWEEN RODENT LIVER MICROSOMES AND EMBRYONIC CELLS
J. H. SELKIRK, P. G. CROY, F. J. WIEBEL, AND H. V. GELBOIN
OAK RIDGE NATIONAL LAB/ERDA
00/00,

IN VIVO SOMATIC MUTATION SYSTEMS IN THE MOUSE
L. B. RUSSELL
OAK RIDGE NATIONAL LAB/ERDA
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PROCEEDINGS OF THE INTERNATIONAL SYMPOSIUM ON MARINE POLLUTION RESEARCH
SAMUEL P. MEYERS
LOUISIANA STATE UNIVERSITY/EPA
01/76, EPA-600/9-76-032,
SYMPOSIUM PAPERS DISCUSS HOW MAN'S ACTIVITIES HAVE AFFECTED NATURAL RESOURCES OF A COASTAL ENV. PARTICIPANTS, REPRESENTING INTERNATIONAL ASPECTS OF COASTAL POLLUTION, REVIEWED CURRENT STATUS OF RESEARCH & PROCEDURES PLANNED TO MINIMIZE OFFSHORE COASTAL DAMAGE.

PUBLICATIONS BIBLIOGRAPHY - 1971-1976 ENVIRONMENTAL RESEARCH CENTER RTP, NC.
(INDIVIDUAL AUTHORS NOT IDENTIFIED)
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03/77, EPA-600/9-77-006,
LISTING OF THE PUBLISHED ARTICLES BY THE STAFF OF THE 4 LABORATORIES COMPRISIN EPA'S ENVIRONMENTAL RESEARCH CENTER, RESEARCH TRIANGLE PARK, NORTH CAROLINA. THE BIBLIOGRAPHY IS INCLUSIVE FOR THE PERIOD JANUARY 1971- SEPTEMBER 1976, ALTHOUGH SOME CITATIONS PREDATING EPA'S CREATION (DECEMBER 1970) ARE INCLUDED.

ENVIRONMENTAL RESEARCH OUTLOOK FY 1977-1981
OFFICE OF PLANNING AND REVIEW
EPA/EPA
02/77, EPA-600/9-77-002,
THIS REPORT IS THE SECOND OF A SERIES OF ANNUAL REPORTS TO CONGRESS PRESENTING A 5-YEAR PROJECTION OF ENVIRONMENTAL RESEARCH ACTIVITIES TO BE CONDUCTED BY EPA. THE DOMINANT PROGRAMS IN THE FORECAST PERIOD ARE HEALTH EFFECTS AND ENERGY-RELATED COMPREHENSIVE ENVIRONMENTAL RESEARCH.

AN EXPERIMENT IN ZERO-BASE BUDGET ANALYSIS— FISCAL YEAR 1978
REINER, GAGE, LASKA, HASTATTER
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03/77, EPA-600/9-77-009,
DURING 1976, THE CONGRESSIONAL BUDGET OFFICE (CBO) WAS REQUESTED TO REVIEW THE INTERAGENCY ENERGY/ ENVIRONMENT R&D PROGRAM. DISCUSSIONS BETWEEN EPA & CBO RESULTED IN A COMMITMENT ON THE PART OF OMB TO COMPLETE A ZERO-BASE BUDGETING (ZBB) ANALYSIS OF THE PROPOSED FY 78 BUDGET. THIS REPORT CONTAINS BOTH THE ZBB RANKINGS AND A REVIEW OF EXPERIENCES IN APPLYING THE ZBB CONCEPT TO A FEDERAL R&D PROGRAM.

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OAK RIDGE NATIONAL LAB/ERDA
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NATIONAL PLAN FOR THE SAFETY & HEALTH OF DIVERS IN THEIR QUEST FOR SUBSEA ENERGY
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